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# The Place of Fertility Control in Public Health*

REGINE K. STIX, M.D.
*New York, N. Y.*

WITHIN the past fifteen years there has been growing recognition of the fact that the "birth control movement" is only a new aspect of an age-old attempt on the part of people to solve for themselves the problems of family size. Historical records show that, in addition to abortion and infanticide, crude methods of contraception have been used as a means of controlling fertility since 1500 B.C. or earlier.[1] There is increasing understanding of the close association between the problems of excess fertility and sterility and those of infant and maternal morbidity and mortality, and, as a result, a number of states and cities are including advice on fertility control in their maternal health programs. It seems timely, therefore, to review briefly the background of the public health aspects of the problem and to appraise what has been done in the field to date.

The results of population studies in the United States within the past fifteen years have revealed certain persistent trends and differentials which bear directly on the rôle which public health may play in dealing with the problems of fertility. The approach is twofold: the prevention of disease associated with childbearing, where possible, and the more indirect effort to raise general standards of health by lowering excess population pressures and improving standards of living.

Clear-cut regional, rural-urban, and socio-economic differentials in fertility have characterized the population picture in the United States for the past century or more. They were still present in 1940, when the ratio of children to women was approximately 65 per cent higher in the predominantly rural East South Central states than in the highly industrialized Middle Atlantic region. For the country as a whole, fertility rates of white farm women were 120 per cent higher than those of women in cities of 500,000 and over, and there was a consistent decline in fertility with increasing size of community.[2, 3]

Within each region there has also been a persistent inverse association be-

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tween birth rates and socio-economic status. Birth rates have been highest in those groups with the lowest incomes and the least education, and lowest in the groups with the highest educational attainment and highest incomes. Within the last two decades, however, there has been a tendency for rates to remain relatively stable among groups with the highest socio-economic status, while still declining in the lower income and less educated groups. Thus, since 1930, fertility rates in the group with the highest economic status have been slightly higher than those in the next lower socio-economic group. This may presage the beginning of a change in the general trend which has persisted since the industrial revolution.[4]

Until Raymond Pearl published his study of the prevalence and effectiveness of the contraceptive efforts of a large group of women who came to hospitals in cities east of the Mississippi to bear children, it was generally believed that women in the lower economic levels were innately more fertile than those of higher economic status. There was much discussion of the effect of higher education and careers for women on their ability to bear children. Pearl's study presented for the first time scientific evidence that the observed differentials in birth rates were due, in major part if not entirely, to differences in the prevalence and effectiveness of contraception and abortion in the various socio-economic groups. Pregnancy rates when no contraception was used showed no significant differences from group to group. Pearl found a direct association between the prevalence and effectiveness of contraception and socio-economic class. Before the wife came to a hospital to have a baby, 78.3 per cent of the well-to-do and rich couples in his group had used contraception, but only 32.7 per cent of the poor couples had attempted contraceptive practice.[5]

Pearl's findings have been substantiated by later studies of selected samples of women who showed a special interest in controlling their fertility by attending birth control clinics or accepting special advice on contraception. Even before these women were given special advice on birth control techniques, differences in the prevalence and effectiveness of contraceptive practice were the main determinants in birth rate differentials within the groups studied. These studies of women who came to clinics for advice on contraception or who were given such advice by a nurse in their homes were made in four areas. The three clinic populations studied were a selected group of women from the Bronx, who attended the Birth Control Clinical Research Bureau in New York City, a group of patients of the Cincinnati (Ohio) Maternal Health Clinic, and a group who attended the Spartanburg (S. C.) Maternal Health Clinic. The field study was made in Logan County, W. Va.[6-9]

The women in Pearl's sample, being patients in maternity hospitals, constituted a select group with respect to overt fertility and could by definition include only those women who bore at least one child each during the period of study. The women in the other studies quoted, who sought or accepted special contraceptive advice, were probably highly fertile. Thus, until very recently, our knowledge of the prevalence and effectiveness of contraceptive practice has been limited to information about families with demonstrated fertility.

The first detailed study of a large population group, unselected with respect to overt fertility or a special interest in fertility control, was initiated in 1941. It was conducted in Indianapolis by the Committee on Social and Psychological Factors Affecting Fertility, and sponsored by the Milbank Memorial Fund, with grants from the

Carnegie Corporation of New York. To date, only the preliminary analyses of the material have been published, but unpublished data appear to substantiate the thesis that variation in the prevalence and effectiveness of contraceptive practice is probably the most important factor in the production of differentials in fertility in a group which is fairly representative of the white urban population of the United States.[10]

Materials for all the studies discussed above were secured by interviewing women * and ascertaining from them, in addition to basic data on age, date of marriage, etc., information concerning the date and type of termination and length of gestation of each pregnancy and the type of contraceptive practice, if any, which preceded it. The women were also asked whether contraceptive practice was deliberately interrupted in order to permit pregnancy to occur, and, if the pregnancy terminated in abortion, whether the abortion was spontaneous or induced. Information concerning morbidity associated with pregnancy was also collected. A mass of interesting data was secured, but for the purposes of this review, discussion will be limited to those data relating to contraceptive practice.

In all groups studied, the couples involved had used mainly the types of contraception generally available, rather than the occlusive feminine methods frequently advocated by physicians and in general use in birth control clinics. Those most commonly used in the rural South, as well as in large cities, were condoms, coitus interruptus and douches of various kinds. Pregnancy rates computed separately for experience with each type of contraceptive, and compared with those of the same groups of women when no contraception was used, show that even without special instruction in approved techniques, the use of contraception reduced the risk of pregnancy considerably, depending on the type of contraception used and the regularity of its use.[9-13]

In each of the studies discussed, the method of computing pregnancy rates consisted in relating total reported experience without contraception to the number of pregnancies occurring during this experience, and in making a similar type of computation for experience with all contraceptives and with each separately. Time pregnant and prolonged absences of husband and wife were subtracted from the total experience, since during these periods the wife was presumably not exposed to the risk of pregnancy. Pregnancy rates were computed as pregnancies occurring in each hundred-person years' exposure to the risk of pregnancy. Experience of all couples in each category of contraceptive or non-contraceptive experience was pooled.[14, 6, 3]

Certain findings were common to all the studies. Pregnancy rates during periods when no contraception was used showed no significant differences for different socio-economic groups, when the experience of women with known pelvic pathology was excluded from the total experience.[5-7] There were regional differences in the total non-contraceptive rates observed in New York, Cincinnati, and the two southern groups, which were largely attributable to differences in the proportions of women in the four groups who were known to have serious pelvic pathology or other diseases which might interfere with fertility. Rates without contraception were highest in the New York group and lowest in the two southern rural groups studied.[8, 9] Because of the wider and more effective use of contraception in the urban areas, however, pregnancy rates for all experience, with and without contraception, showed pre-

* In the Indianapolis study, schedules were secured from both husbands and wives.

TABLE 1

*Mean Number of Months of Exposure per Pregnancy for the Non-contraceptive Experience of Four Groups of Women Prior to Clinic Attendance*

| Order of Pregnancy | White Patients of: Clinical Research Bureau (N. Y. C.) | White Patients of: Cincinnati Maternal Health Clinics | White Patients of: Spartanburg Maternal Health Clinic | Negro Patients of Spartanburg Maternal Health Clinic |
|---|---|---|---|---|
| | Mean Number of Months of Exposure per Pregnancy | | | |
| First pregnancies | 4 | 7 | 7 | 8 |
| All later pregnancies | 11 | 13 | 17 | 15 |
| | Exposure in Months and Number of Pregnancies | | | |
| | Exp. Mo. / No. Preg. | Exp. Mo. / No. Preg. | Exp. Mo. / No. Preg | Exp. Mo. / No. Preg. |
| First pregnancies | 2,393 / 540 | 8,051 / 1,121 | 3,224 / 433 | 2,676 / 353 |
| All later pregnancies | 3,883 / 341 | 20,357 / 1,583 | 20,862 / 1,228 | 18,667 / 1,283 |

cisely the reverse differential, with the highest rates in Spartanburg and in Logan, and the lowest in New York City.

The average woman in the New York group conceived her first pregnancy 4 months after marriage, when no attempt was made to use birth control methods. In Cincinnati, and for both Negro and white women in Spartanburg, the average interval between marriage and the first conception was between 7 and 8 months.

After the first pregnancy, the rate of conception was lower, even when no attempt was made to control fertility, probably because of lactation and associated amenorrhea. The differences observed between the groups were in the same direction as those observed for first pregnancies, but less marked (Table 1).

For those couples who practised contraception from marriage, the elapsed time between marriage and the first pregnancy was considerably longer than when no contraception was used, and the same was true of the exposure for later pregnancies as may be seen in Table 2.

The effectiveness of the contraception used varied considerably from group to group. For the New York women, the types of contraception used before clinic attendance reduced the risk of pregnancy by 79 per cent. In Cincinnati, the risk was reduced by 52 per cent; while in Spartanburg, the white women

TABLE 2

*Mean Number of Months of Exposure per Pregnancy for the Experience with Contraceptives of Four Groups of Women Prior to Clinic Attendance*

| Order of Pregnancy | White Patients of: Clinical Research Bureau (N. Y. C.) | White Patients of: Cincinnati Maternal Health Clinics | White Patients of: Spartanburg Maternal Health Clinic | Negro Patients of Spartanburg Maternal Health Clinic |
|---|---|---|---|---|
| | Mean Number of Months of Exposure per Pregnancy | | | |
| First pregnancies | 29 | 17 | 19 | 11 |
| All later pregnancies | 44 | 22 | 28 | 21 |
| | Exposure in Months and Number of Pregnancies | | | |
| | Exp. Mo. / No. Preg. | Exp. Mo. / No. Preg. | Exp. Mo. / No. Preg. | Exp. Mo. / No. Preg. |
| First pregnancies | 5,085 / 174 | 4,330 / 254 | 934 / 50 | 248 / 22 |
| All later pregnancies | 63,838 / 1,459 | 73,655 / 3,379 | 13,656 / 484 | 3,493 / 170 |

had rates 47 per cent lower than were observed during the periods when no contraception was used, and the Negro women, rates 28 per cent lower. The effectiveness of untutored efforts at contraception noted in other studies ranged between 46 and 63 per cent.[13, 9]

The practice of contraception in each case included all types of use, both regular and irregular, and it is obvious that couples in the rural areas, who had less access to contraceptive materials than those in the urban areas, not only used less effective contraceptives, but used them less regularly, because of more primitive living conditions.

Most of the couples who practised contraception from the time of marriage, as well as many others who started its use after the first or second pregnancy, interrupted its use for at least one "planned pregnancy." Twenty-two per cent of first pregnancies, 25 per cent of second pregnancies, and 20 per cent of third pregnancies in the New York group studied, resulted when the practice of contraception was deliberately interrupted in order to permit pregnancy to occur. Pregnancy rates for these conceptions were consistently and significantly higher than those of women in the same group who had never used contraception. Fifty-four per cent of these "planned pregnancies" were conceived within a month after the couples stopped using contraception, and 80 per cent of them within 3 months.[6]

Rates for "planned pregnancies" in the other groups studied were of the same order, but there was insufficient material for publication. Thus, there is no indication that the use of contraception, at least in the groups observed, impaired the fecundity of the users.

The professional contraceptive services offered these women were of three types. In New York, women came of their own accord to a voluntary agency —the Birth Control Clinical Research Bureau—for advice about controlling fertility which appeared to them alarmingly high. Many of them had resorted to abortion to control the size of their families.[6]

In Cincinnati, the Maternal Health Clinic sponsored by the local Academy of Medicine advised mainly women referred for health reasons. They did not conceive as rapidly as the women in the New York group before they attempted contraception, but, because they used less contraception and used it less effectively, the average number of pregnancies per woman was greater. Some of them were referred because of illness contraindicating further pregnancy, and others because poor economic conditions and large families were already placing intolerable burdens upon them.

The Spartanburg Maternal Health Clinic, in the Spartanburg General Hospital, is one of the regularly operated clinics of the County Department of Health. It accepts only patients referred from other clinics in the General Hospital. Each record in the series studied contained a digest of the medical findings, a report of pelvic examination, and laboratory reports on vaginal and urethral smears, Wassermann and urinalysis. The series did not, of course, include women with sterilizing pathology, since such women would not have been referred for contraceptive advice.

Table 3 shows the distribution of cases by the main reason for advising contraception. Only 19 per cent of the white women and 16 per cent of the Negro women referred during the years 1935–1939 were referred for child-spacing only. The remainder were referred because of illness which made it inadvisable for them to become pregnant. More than 40 per cent were referred because of serious illness, such as tuberculosis, syphilis, heart disease, nephritis, or pellagra; an additional 30 per cent were referred because of

TABLE 3

*Distribution of Reasons for Advising Contraception for Patients of the Spartanburg Maternal Health Clinic*

| *Main Reason for Advising Contraception* | *White Women* | *Negro Women* |
|---|---|---|
| Total Number of Women Advised * | 532 | 455 |
| | *Per cent Advised for Each Reason* | |
| Total | 100.1 | 100.0 |
| Child Spacing Only | 19.0 | 16.3 |
| Tuberculosis or Tuberculosis Contact | 4.9 | 1.5 |
| Syphilis or Syphilis Contact | 4.5 | 25.1 |
| Cardiac or Vascular Disease | 4.7 | 6.8 |
| Pyelitis, Nephritis, or Previous Toxemia | 10.7 | 6.8 |
| Pellagra | 5.1 | 0.4 |
| Anemia or General Debility | 32.7 | 27.7 |
| Tumor | 0.9 | 0.9 |
| Diseases of Endocrine Origin † | 3.4 | 2.2 |
| Diseases of the Pelvis Other than Tumor | 5.3 | 5.3 |
| Neurological or Psychiatric Disease | 2.1 | 0.2 |
| All other Reasons ‡ | 6.8 | 6.8 |

* Neither the medical diagnosis nor the reason for advising contraception was noted on the records of one white and two Negro women.

† Mainly diabetes and thyroid disease.

‡ Includes arthritis, diseases of the gastrointestinal tract other than tumor, varicose veins, phlebitis, non-tuberculous diseases of the respiratory tract, obesity, dental caries, and infected tonsils.

anemia or general debility, and the remainder for other medical reasons.

In Spartanburg, almost all the women referred for contraceptive advice were also in need of some sort of gynecological care. More than 90 per cent had perineal and cervical lacerations, and about 80 per cent had cystocele or rectocele or both.[15] Detailed data concerning medical findings are not available for any other group of women studied. Spartanburg data, however, show that among the type of women served by a county health department in a semi-rural southern area, there is ample reason for the establishment of contraceptive services from a purely medical point of view. It is obvious that if these women had become pregnant before their general health was improved, pregnancy would have constituted a hazard both to the mother and her child.

Even without established clinical services to advise couples on birth control methods, there are widespread attempts on the part of the population everywhere to space births and to limit the number of their offspring. Frequently, ineffective and harmful methods may be used through ignorance, and when these fail to prevent conception, there is resort to abortion, with resultant serious injury to health.

For the women to whom pregnancy would constitute a serious health hazard, there is no choice for the physician but to offer the most effective contraceptive methods available, to perform a sterilizing operation, or to counsel abstinence for long periods. No perfect contraceptive method has been discovered to date, but a number of methods can be highly effective, when acceptable to the couples using them and when used regularly and with care.

For groups given special advice on birth control, the pessary with jelly has proved very effective. This was the method prescribed for more than 90 per cent of the patients served in the New York, Cincinnati, and Spartanburg clinics, and when used it prevented between 80 and 95 per cent of the pregnancies which would have occurred had the couples used no contraception. In Spartanburg, the effectiveness ratio was about 80 per cent for both white and Negro patients; in Cincinnati, 90 per

cent; and in New York, 94 per cent. The use of other types of contraception was also highly effective after the women had learned something about the anatomy of coitus and the reasons for care and diligence in the use of all contraceptives. All types of contraception other than those prescribed were 92 per cent effective for New York couples, 72 per cent for Cincinnati couples, 81 per cent for Spartanburg white couples, and 55 per cent for Spartanburg Negroes.[8]

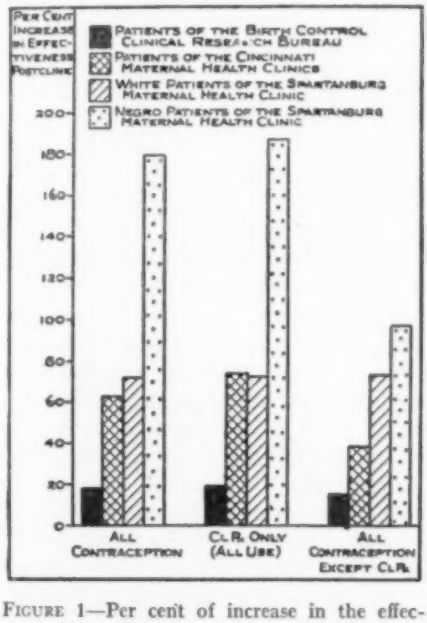


FIGURE 1—Per cent of increase in the effectiveness of the contraception used after clinic attendance over that used before clinic attendance, for four groups of women.

Figure 1 shows the per cent of increase in the effectiveness of all contraception used by the groups studied after they had been advised, over that used before they were advised. The greatest increase in effectiveness was in those groups in which preclinic contraceptive practice was relatively ineffective, the smallest among New York couples who had used contraception very effectively before they attended a clinic.

The Logan group did not attend a maternal health clinic. The service there consisted in the distribution of contraceptive jelly by a nurse to all women in the area referred to her by doctors and to others who requested the service. Here, the emphasis was on general reduction of birth rates in a mining area of high fertility and extremely low economic status. The method prescribed was not so effective as those prescribed in areas where clinical facilities could be made available, but its use was followed by a reduction of 43 per cent in the pregnancy rates of the women in the area.[9]

Not all the women who came for or accepted advice on contraceptive methods, in the studies cited, used what was given them, but between 88 and 97 per cent made some attempt to use the methods prescribed.* The proportion of women who continued to use the prescribed methods decreased first rapidly and then more gradually, until a year after their first contact with a clinic, less than two-thirds of those women who were found and interviewed were still using the prescribed methods.[8] Those giving up the use of the contraceptives prescribed for them turned to the methods in general use before they attended the clinics, and their use of these methods was, as has been noted, almost as effective in preventing pregnancy as were the presumably safer methods.

It was apparent in studying the material in detail that the training of patients to understand their own anatomy and the proper care of contraceptive devices is more important than the type of method prescribed, in achieving fertility control. Some couples prefer one type of method, some another, and still others may prefer to use several different

* For the per cent of women using types of contraception prescribed for them, in these and other studies, see Beebe, *op. cit.*, p. 155, Table 37.

methods in rotation. It is important that physicians and nurses prescribing contraception take individual choice of methods into account and instruct patients in the best use of the contraceptives of their choice. A method relatively ineffective for some couples may be highly effective for the couple liking it and using it diligently. Conversely, the most effective method is of no use to the couple who dislike it and will not use it.[13]

The single-mindedness with which occlusive vaginal methods are prescribed in most contraceptive clinics and by most physicians is obviously unsound. If between a third and half of the patients for whom pessary and jelly are prescribed give up their use within a year and more couples give them up as time goes on, it would seem wise to question patients closely concerning their choice of contraceptives and to advise them how best to use the contraceptives of their choice. Patients unacquainted with the use of pessary and jelly should be instructed to return for training in the use of other techniques if the one first prescribed is not satisfactory.

The U. S. Public Health Service, in 1941, declared its stand on the inclusion of contraceptive services in state maternal health programs in the following statement:

> "It is the policy of the Public Health Service to coöperate with the health departments of the various states in the programs that they decide are in the best interest of the protection and advancement of the people they serve.
>
> "Should a State Department of Health decide on its own initiative to undertake a child-spacing program in accordance with the health laws of the State, the Public Health Service would give the proposal the same consideration as would be given to any other proposal in connection with the health program of the state." *

A number of southern states have pioneered in including contraceptive clinics and services in the maternal health programs in many of their county health units. These states are North Carolina, Alabama, South Carolina, Florida, Mississippi, and Texas. In these states the approval of the state medical society was sought and obtained before the program was instituted. The individual county medical societies also approved it before it was introduced into each county. The Planned Parenthood Federation has given technical aid and some subsidies for supplies as a means of encouraging the establishment of services under public health auspices. The types of service vary with available clinical facilities and range from the intramural clinic under county health department supervision, like that in Spartanburg, to the services of a visiting staff of public health nurses, who, in addition to their other duties, can instruct women in their homes in simple techniques requiring no fitting, when the need arises.

State medical societies of Georgia, West Virginia, and Virginia have recommended that these states establish contraceptive services for indigent women under state health department supervision. In addition, there are scattered clinics under local health department supervision in various places in the United States.[16] More services will doubtless be established when trained physicians, now in the Army and Navy, become available.

Since 1941, the Council on Pharmacy and Chemistry of the American Medical Association has considered contraceptive drugs for acceptance on the same basis as other drugs, and standards for certain contraceptive products were accepted for inclusion in the 1944 edition of *New and Nonofficial Reme-*

* Letter from the Acting Surgeon General, dated October 17, 1941, in response to a request for a statement of policy from the Planned Parenthood Federation of America. (The only states in which the prescription of contraception by a physician is illegal are Massachusetts and Connecticut.)

*dies.*[17] This is an important step, designed to protect the public against the use of harmful and ineffective contraceptives.

Clinics for the diagnosis and treatment of sterility have been established in a number of cities in the United States, but none of them is under public health auspices. Most of them are in large hospitals because of the necessity of having laboratory and other facilities available, in order to determine, in each case, what may be the cause of sterility. The diagnosis and treatment of sterility are still in the experimental stage and, until more is known about them, it is unlikely that sterility clinics can be included in public health services. Health officers can and should encourage the study of the problem in those areas where facilities are available, because the existing data concerning the prevalence of involuntary childlessness suggest that between 5 and 10 per cent of all women may be sterile.[18] When the Indianapolis study is completed we shall probably have more reliable data about sterility than are now available.

The control of fertility presents many problems which concern the public health. Maternal mortality and morbidity rates have been greatly reduced within the last few years by careful study and control of obstetrical practices. There remains a group of women, however, for whom pregnancy, even under the best medical supervision, constitutes a hazard to life and health. For the woman in this group it is imperative that pregnancy be prevented until her health is improved and it is no longer hazardous. She is entitled to sound medical advice concerning the means of preventing pregnancy.

The studies reviewed in this article have shown that contraception is widely practised, but that its effectiveness may be considerably increased by expert advice. It is probable that with more attention to individual preferences in contraceptive methods, effectiveness and acceptability could be increased further.

Women of low economic status with high fertility and high morbidity and mortality rates are those for whom this type of care should be available under public health supervision. The U. S. Public Health Service has declared its willingness to aid such programs when they are initiated by the states. If and when such services are established, their policies should be determined by the results of past research. Plans for service should include continuing research and evaluation, to determine the quality and effectiveness of the service and its broad influence on maternal morbidity and mortality rates.

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# Comparison of Observed and Expected Deaths in Selective Service Registrants with Negative and Positive Serologic Tests for Syphilis

MURRAY C. BROWN, M.D.

*Director of Medical Education, Meharry Medical College, Nashville, Tenn.*

IT can be assumed that it is desirable for the epidemiologist to measure syphilis in those terms which have gained general usage in the description of other communicable diseases. While the nature and course of this disease have prevented collection of local data for incidence, morbidity, and mortality, attempts to remedy this situation have been reported in the literature. Development of techniques to provide acceptable information which may be used in place of these data has been a matter of concern.

Because syphilis is exceedingly chronic, incidence must be distinguished from prevalence. Techniques for measuring prevalence of syphilis are familiar. The serologic survey, either of an entire population, or of a large sample free from selection, is perhaps the most acceptable method. It is economical and requires no special facilities not generally available. While "serologic syphilis" is not necessarily clinical syphilis, to some extent the degree of error can be measured. It is of no greater significance than the error encountered in other techniques used to measure prevalence.

NOTE: This paper was prepared from materials collected by the Nashville Venereal Disease Control Program, City Health Department, Nashville, Tenn., during the author's incumbency as director.

As a measurement which may be substituted for incidence, or "attack rate," for many demographic purposes, Turner has developed the "discovery rate." [1] The case he presents for this method of measuring syphilis for certain specific purposes is convincing.

It may therefore be said that information of practical value regarding the prevalence and incidence of syphilis may be collected.

Morbidity and mortality are another matter. Of the two, mortality is probably the more important. While morbidity produces economic and social results which are serious, these effects are observed in but a few individuals. Only those patients with late crippling lesions suffer noticeable disability, and they make up no more than 4 to 6 per cent of a syphilis population.

Death from syphilis, either due to late lesions or to acceleration of other disease processes, has seemed the significant factor. If this factor alone could be accurately determined, data concerning incidence and prevalence could be interpreted, and a community profile for syphilis could be developed. From such a profile the local economic, social, and medical significance of syphilis could be determined.

It is distressing to realize that, as Moore [2] observed, we know very little about syphilis as a cause of death de-

spite four hundred years of study. Beyond the simple fact that some individuals die as the result of anatomic damage produced by this disease, little more can be said with certainty. The increased mortality to be expected from introduction of a given number of cases of syphilis into a community cannot be presently estimated with even fair accuracy.

The specific death rate for syphilis as reported in our vital statistics does not provide a measure of the mortality from syphilis in the community. Specific death rates calculated from death certificates cannot be used in a disease which is frequently undiagnosed or incorrectly diagnosed as a cause of death, nor can such rates be used when social and economical implications deter the physician from indicating the disease as a cause of death. The confidential death report [3] has been devised to overcome the reluctance of the physician to indicate syphilis as a cause of death. This technique does not provide accurate death data for it does not compensate for the physicians' failure to recognize syphilis as a cause of death. There is also no means whereby the physician can properly evaluate and report syphilis as a contributing cause of death. The error introduced by these factors is probably excessive.

Schamberg [4] has reviewed the approximately seventy papers on the prognosis of syphilis that make up the modern literature. While many of these were not directly concerned with methods of determining the number of deaths resulting from a given prevalence of syphilis in a community they all dealt with the outcome of infection with syphilis in terms of death. It would seem possible that such a wealth of material would provide sufficient information to make it possible to state with accuracy the number of deaths that should result from a given incidence or prevalence of syphilis. Certainly this is the material which furnishes the basis for statements about the serious nature of syphilis.

A few of the more pertinent papers are presented in Table 1. The difficulties in using the literature for demographic purposes can be inferred from examination of these samples, which are representative of the techniques employed. The careful study of autopsy material by Rosahn and Black-Schaffer [5] is more accurate than demographic methods demand. Unfortunately it cannot be used to estimate the probable outcome of syphilis in a community. The population that comes to autopsy differs from a normal population. It is a hospital population

TABLE 1

*Selected Studies of Syphilis and Death*

| *Study* | *Material* | *Purpose* | *Remarks* |
|---|---|---|---|
| Rosahn, Black-Schaffer, "Studies in Syphilis" I, II, III | 5,300 Autopsies—1917–1942 | Incidence of Syphilis by Age, Sex, Color | Autopsy population Involves selection. |
| Brunsgaard, E.—1929 | Untreated syphilis Oslo Clinic | Sequelae of Untreated Syphilis | "More selection than commonly supposed."* |
| Hall, A. F., Undertreatment vs. Overtreatment in Syphilis —1935 | Life insurance policy holders—1907–1927 | Death by Treatment Status and Age | Economic selection. |
| Usilton and Miner, "Tentative Death Curve for Syphilis . . ." | 5,200 C.C.G. patients | Life Expectancy—White and Negro Males by age | Selection by Economic status? Sick patients? |

* Sowder, W. T.

in which economic and social selection operates and no correction for these differences can be made.

The study of Bruusgaard [6] on the outcome of untreated syphilis might be usable if we could adjust for the effects of treatment on the prognosis of syphilis in the community. Sowder,[7] however, has destroyed this possibility by his valid criticism of the selection that occurred in Bruusgaard's material.

Hall's analysis of The Actuarial Society's Medical Impairment Study of 1929 contains mortality data for syphilis by treatment status from the experience of all the American insurance companies.[8] If the technical difficulties in using this material could be overcome, the information could not be applied to a community because the material studied was made up of policy holders. Possible economic selection, and the diagnostic techniques employed at the time the observations were made invalidate any conclusions from this study.

Usilton and Minor's study of the Coöperative Clinical Group material [9] indicated that males suffered a shortened life expectancy when they had syphilis. This decreased expectancy was 17 per cent in Negroes and 30 per cent in whites. These findings are expressed as tentative death curves that could be used as a measure of the mortality to be expected from syphilis. Unfortunately the material studied was under observation in a clinic, a factor which involves selection. Table 2 demonstrates the difference which may exist between a clinic syphilis population and a syphilis population obtained by examining an entire segment of a population. It will be noticed that the percentage of late syphilis with symptoms is approximately 50 per cent higher in the clinic population. Death attributable to syphilis is frequent among individuals with late syphilis. This suggests that mortality studies on clinic populations will exaggerate the rôle of syphilis as a cause of death.

The relationship of late symptomatic syphilis to death from syphilis is so direct that one might argue that the differences in the amount of late syphilis could be used as a correction factor. A correction factor of only 30 per cent applied to the Usilton and Miner figures would indicate that Negro males with syphilis outlive their uninfected fellows, while white males do quite as well in either category!

From these studies, and from the review of the defects of the usual demographic techniques, it is apparent that some as yet unreported method of determining mortality from syphilis must be developed if we are to have information for syphilis comparable to the specific death rate used in other communicable diseases.

Puffer,[10a] Brailey,[10] and other workers studying tuberculosis mortality have encountered similar problems and have developed means for examining mortality in that disease.

Puffer, et al. in 1942, reported a portion of a study of tuberculosis in

TABLE 2

*Distribution of Syphilis by Stage among Nashville Negro Males 18–45 Clinic Population Compared with a Consecutive Series of Registrants Discovered to Have Positive Serologic Test by Selective Service*

| | *Primary Secondary* Per cent | *Early Latent* Per cent | *Late Latent* Per cent | *Late (With Symptoms)* Per cent |
|---|---|---|---|---|
| 926 Registrants | 3.9 | 33.6 | 58.4 | 4.1 |
| 1,181 Clinic Patients | 8.4 | 27.3 | 58.0 | 6.3 |

Tennessee.[10s] Incidental to one phase of this particular study it was desirable to evaluate the death rates from all causes for the household associates of the tuberculous index cases which were the subject of the investigation. This evaluation was accomplished by comparing the death rates for all causes, among household associates, with the rates prevailing for death from all causes among the similar age, sex, and color populations in the State of Tennessee. The technique employed involved obtaining the aggregate life experience of the household associates. "The average age-specific death rates of the colored population of Tennessee for the 5 year period 1934–1938 were then applied to the life experience of each age group. This procedure gave for each group the 'expected' number of deaths. These 'expected' deaths were compared with the deaths observed in the life experience of the household associates of tuberculous persons." Statistically significant excesses of observed deaths over "expected" deaths could be interpreted as the measures of the hazard introduced by the exposure of the observed population to tuberculosis.

It is reasonable to believe that the aggregate life experience of any population exposed to any unusual hazard of death could be studied by this method and the hazard could be measured by comparing the observed deaths from all causes with the "expected" deaths from all causes.

This method of studying mortality had interesting possibilities. To be applied to syphilis, certain information would have to be available. It would be necessary to have a syphilis population in which individuals could be identified. To accumulate the life experience for the study it would be necessary to know the date of diagnosis of each individual. The individual would have to be followed until he died, was lost from observation, or until the close of the study period. The time between diagnosis and the close of the observation period would represent individual experience, and the aggregate of the individual experience would constitute the life experience. It would be of vital importance that the syphilis population studied be representative of syphilis in its distribution in the community by stage and degree of treatment, and that no other factor of selection carrying a hazard of death operate in this population which was not operative in the general community.

If these conditions could be fulfilled, any syphilis population which was representative of a statistically defined segment of a community could be studied, and differences found between "expected deaths" and observed deaths could be interpreted as the effect of syphilis in that particular age, sex, and color group.

The method was of particular interest because comparing expected and observed deaths from all causes involves no attempt to diagnose syphilis as the cause of death, yet should indicate the total effect of syphilis as both a contributory and a direct cause of death. In other words, the seriousness of syphilis as a hazard to life might be determined.

Selective Service provided a population which seemed susceptible to study by this method.

Table 3 presents the final distribution of the registrants of 10 Selective Service Boards which serve Nashville and the surrounding county. Registration was completed February 1, 1942. Between that date and February 1, 1944, when preinduction physical examinations were terminated in Tennessee, registrants were examined by local physicians. Each examination included a Standard Kahn test for syphilis, performed in the laboratories of the Tennessee State Department of Public Health. The name,

TABLE 3

*Composition of Selective Service Group*
*By Color, Number Serologically Examined, and Deaths*
*Ten Nashville Selective Service Boards*

| *Registrants of 10 S.S. Boards* | *Total* | *Per cent* | *Number Serologically Examined* | *Per cent of Men Examined* | *Total Deaths Prior to 2-1-1944* |
|---|---|---|---|---|---|
| Total | 66,037 | 100.0 | 33,987 (Est.) | 51.4 | 603 |
| White Only | 50,692 | 76.8 | 24,000 (Est.) | 47.0 | 328 |
| Negro Only | 15,345 | 23.2 | 9,987 | 65.1 | 275 |

age, color, address, parentage, and result of serologic test was on record for each man examined, at his Board. In addition the dated results of serologic tests were on record at the main offices of the Tennessee State Department of Public Health, by name, address, race, and age.

Table 3 also includes the number of deaths which occurred among men of Selective Service age who were presumed to be registrants of Nashville Boards, between the dates of respective registrations and February 1, 1944.

It will be seen that 15,345 Negroes made up about 23 per cent of the total registration while the deaths among Negroes were about 44 per cent of the total. Almost two-thirds of the Negro registrants had been examined with a serologic test. The prevalence of serologic syphilis was known from published reports for this area to be about 27 per cent among Negro registrants.[11] It, therefore, could be presumed that a fairly large sero-positive group of Negroes had been discovered by Selective Service examinations. The prevalence of positive tests among white Selective Service registrants was known to be about 4.5 per cent. Therefore, despite the greater number of white males examined it was likely that the positive white males would be only one-third as great in number as were the positive Negroes. The higher percentage of Negroes examined also minimized the possibility that selection for examination would introduce selective factors which would affect mortality.

The existence of a large and statistically identified sample of the population of Nashville and surrounding county which could be divided into persons with "serologic syphilis" and persons known to have negative serologic tests suggested the experimental application of the principles of the tuberculosis technique to a syphilis population.

It was realized that acceptance of "serologic syphilis" as a measure of prevalence of syphilis would introduce some error. Our own experience indicated that 3 per cent of the persons examined by Selective Service and found to have positive serologic tests for syphilis could be regarded as non-syphilitic after careful clinical study. It was also clear that some few persons with negative serologic tests did have syphilis but the majority of these would represent persons in stages of incubation or latency rather than persons in whom serious lesions were present. These errors compensated each other to some extent, and in any case did not seem great enough to contraindicate the study.

When the experimental method was developed it also became clear that it would be impossible to substitute careful diagnostic study of each case for the serologic test as a criterion for diagnosis. Despite the use of legal measures to support persuasion some persons could not be brought in for examina-

tions. This last factor decreased the size of the sample and introduced the same type of error demonstrated to exist in clinic populations by Table 2. While study of prognosis by the stage of disease would have been of clinical interest, it was not possible under the conditions.

It was also impossible to study the outcome by amount of treatment received. The same factors operated here. The sample would have been distorted by the conditions which would have made detailed histories possible. It is also true that the sample was too small for subdivision.

These are not serious objections. Specific death rates for other diseases reflect the quality of treatment that prevails in the community. The stage of disease is not of great importance except in clinical studies, and our interest was confined to the outcome of syphilis in whatever distribution by stage existed in our community. For our purposes, it seemed that the answer to be expected from study of the population described would be satisfactory.

In planning the study it became evident that no additional labor would be involved if mortality among the entire group of Negro registrants was studied; so plans were made to determine experience and observed deaths for the men with negative tests for syphilis and for the men who were not examined as well as those with positive tests.

Criteria were set for the determination of experience. Experience for the whole group was to begin with Selective Service registration and was to terminate on February 1, 1944.

Total registrants for each registration were drawn from the board records, and age distributions by usual 5 year periods were calculated from 1940 U. S. Census data. Men in each registration were credited with the months of experience between registration and February 1, 1944, and the totals calculated as person-years of experience in the respective age groups.

The experience for the blood tested group was to start with the date of first serologic test by Selective Service and to terminate on February 1, 1944. Men sent to the army after this date were not given serologic tests by Selective Service. This information was collected by recording the date of serologic examination by the number of months it antedated February 1, 1944. The total person-months of experience were calculated from this material. Registrants were classified by the result of the *first* serologic test taken by the Selective Service System.

In order to confine the study to civilian experience, both deaths and experience occurring after induction were excluded. This was necessary because death hazards in the army are not comparable to those encountered in civilian life. Experience lost due to induction was calculated from date of induction of each registrant to February 1, 1944. This was charged to the proper group by result of serologic examination.

Deaths for the whole group were obtained by abstracting the resident and nonresident death certificates for Nashville and the surrounding county from October, 1940, to February, 1944, for the Selective Service age group. These were supplemented from the records of each Selective Service Board, clinic information and other sources. A death was chargeable to the Selective Service group only when positively identified by comparison of death certificate and the registrant's file in the Selective Service Board. The death was assigned to the proper group on the basis of the first serologic test reported on the Selective Service physical examination record.

All determinations were done on an age-specific basis by years. Ages on death reports were adjusted to age at time of serologic test. Source material

TABLE 4

*Serologic Tests for Syphilis by Age Groups and Result of Test*
*9,834 Negro Selective Service Registrants of Nashville Area*
*October 1940–February 1944*

| Age | Total | Positive | | Negative | | Doubtful | |
|---|---|---|---|---|---|---|---|
| | | Number | Per cent | Number | Per cent | Number | Per cent |
| Under 20 | 894 | 122 | 13.6 | 766 | 85.7 | 6 | 0.7 |
| 20–24 | 2,618 | 559 | 21.4 | 2,018 | 77.1 | 41 | 1.6 |
| 25–29 | 2,208 | 611 | 27.7 | 1,554 | 70.4 | 43 | 1.9 |
| 30–34 | 2,135 | 722 | 33.8 | 1,350 | 63.2 | 63 | 3.0 |
| 35–39 | 1,387 | 489 | 35.3 | 860 | 62.0 | 38 | 2.7 |
| 40–44 | 592 | 216 | 36.5 | 364 | 61.5 | 12 | 2.0 |
| Total | 9,834 | 2,719 | 27.6 | 6,912 | 70.3 | 203 | 2.1 |

included quadruplicate laboratory forms in the Tennessee Department of Public Health, Selective Service Board induction records, and the files for individual registrants in each board.

The first information tabulated for the entire study was the result of serologic tests of Negro registrants by age and result of test. This information is contained in Table 4. The total per cent positive agrees closely with the previous reports for Negro males in Nashville.[11] The slight excess, 27.6 per cent compared to 26.8 per cent reported previously can be accounted for by the inclusion of more men between 35 and 44 years in this sample. The size of the negative and positive populations available for study is shown by age group. Aside from the small numbers for the extremes of age, the number of men is relatively even and of a size permitting analysis, provided experience per man is adequate. The rates for sero-positivity increase on a smooth curve for age—a result which was expected.

The information on deaths became available while experience was still being determined. It was disturbing to discover that, of 275 deaths occurring among Negro registrants, only 92 occurred among men who had been serologically examined. It was recognized that experience per man in the unexamined group far exceeded the experience per man in the examined portion, but the latter group was twice as large. The collection of twice as many deaths in the smaller group at once raised the possibility that the selection of men for blood testing introduced a serious sampling error. Examination of the death certificates showed no marked dissimilarity between the distribution of causes of death in either group. All death certificates were then checked against the respective registrant's Selective Service file to see if any had been excluded from examination on the basis of known physical defects. No selection on physical grounds was demonstrated.

Table 5, which presents the result of calculating death rates for all causes for the Selective Service registrants with negative serologic tests and for the entire group of Negro registrants, supports the belief that no such selection occurred.

The rates derived are irregular, but by removal of the extreme age groups in which the number of men was very small and for which experience is obviously inadequate, much of this uneven gradient disappears. These death rates are compared with statewide rates for Tennessee Negroes. The difference in total rates for each of these three populations is seen to be small. The lowest rate is that for the entire Negro Selective Service population

TABLE 5

*Death Rates for Negro Males by Age*
*All Negro Registrants Compared with Registrants with Negative S.T.S. and with Tennessee State Rates; Including Actual Deaths and Experience for Nashville S.S. Area*

| | Registrants with Negative S.T.S. | | | All Registrants | | | |
|---|---|---|---|---|---|---|---|
| Age | Deaths | Experience | Rate | Deaths | Experience | Rate | Tenn. 1942 Rate |
| Under 20 | 4 | 188 | 21.3 | 12 | 2,009 | 6.0 | 4.4 |
| 20-24 | 7 | 1,726 | 4.1 | 44 | 8,799 | 5.0 | 7.7 |
| 25-29 | 15 | 1,412 | 10.6 | 60 | 8,050 | 7.5 | 7.7 |
| 30-34 | 13 | 1,172 | 11.1 | 73 | 7,220 | 10.1 | 8.5 |
| 35-39 | 6 | 724 | 8.3 | 47 | 5,961 | 7.9 | 12.1 |
| 40-44 | 4 | 408 | 9.8 | 35 | 3,405 | 10.3 | 12.1 |
| Total | 49 | 5,630 | 8.7 | 271 | 35,444 | 7.6 | 8.4 |

which indicates that selection of low risk persons for blood testing probably did not occur. The mean age for each total group is similar.

The sex, age, color-specific Tennessee state rate [12] is similar to the experimental rates in Table 5 but shows an even gradient from younger to older ages. The stability of this rate is of course due to the large experience on which it is calculated, and the instability of the experimental rates reflects the small experience from which they are derived.

Table 6 presents the results of applying the Tennessee State age-specific death rate for Negroes to the experience in both the negative and positive Selective Service populations to determine the number of deaths expected for each group. Both experimental populations exclude the 350 years' experience for 208 men with doubtful blood tests. This experience resulted in no deaths, and its exclusion does not affect the results materially.

These expected deaths are compared with the actual number of deaths experienced in each experimental group. The negative group shows exactly normal mortality while there is a slight excess mortality for sero-positive registrants. This excess lies well within limits of pure chance occurrence. Age 45 was excluded from Table 6 for convenience in both groups, and contains one sero-positive death. Adding this death to the total deaths of sero-positive registrants will not make an observed difference in mortality which is significant.

Among the deaths syphilis is not once reported as the cause of death, or the contributory cause of death, for a serologically examined man. One death certificate for a sero-positive man states

TABLE 6

*Deaths S.T.S. Positive and Negative Negro Registrants With Expected Deaths by Tennessee State Rates Including Experience for Nashville Selective Service Area*

| | S.T.S. Positive | | | S.T.S. Negative | | |
|---|---|---|---|---|---|---|
| Age | Experience Man-Years | Deaths Actual | Expected Deaths Tenn. Experience (1942) | Experience Man-Years | Deaths Actual | Expected Deaths Tenn. Experience, 1942 |
| Under 20 | 113 | 1 | 2.4 | 188 | 4 | 0.8 |
| 20-24 | 906 | 8 | 4.0 | 1,726 | 7 | 13.3 |
| 25-29 | 1,099 | 9 | 11.6 | 1,412 | 15 | 10.9 |
| 30-34 | 1,056 | 12 | 11.7 | 1,172 | 13 | 10.0 |
| 35-44 | 951 | 12 | 8.0 | 1,132 | 10 | 13.7 |
| Total | 4,215 | 42 | 37.7 | 5,630 | 49 | 48.7 |

aortic regurgitation and uremia as the cause of death. This of course cannot be distinguished from aortic regurgitation from rheumatic fever but was presumably of syphilitic origin.

Reports for registrants with negative serologic tests include one death of a known syphilitic in the 25–29 year age group. Search of hospital, clinic, and morbidity reports for recent years revealed no other deaths involving clinical syphilis in this group.

Two deaths in the sero-negative group may have been due to syphilis but probably were not. Organic heart disease was reported on one death certificate, and cerebral hemorrhage on the other.

Autopsy was performed in several instances among the unexamined registrants, but no autopsies are reported for either sero-positive or sero-negative cases.

Search for previous clinical records for dead men in the group with no serologic examination revealed a total of 35 deaths with previous clinical diagnoses of syphilis. Thus 19 per cent of the dead not examined by Selective Service were known to have syphilis. While the point can be determined, no check has been made to determine the number of sero-positive living men who were known to treatment agencies prior to examination by the Selective Service Board.

The positive and negative men show no gross difference in physical status. The percentage of sero-negative men deferred on physical grounds is similar to the percentage of men classified "4-F" for causes other than syphilis in the sero-positive group.

## DISCUSSION

It will be possible to continue observation of this population for several years. The serological examinations by local boards are now concluded, so information about this population from that source is complete. Future experience can be accumulated without repeating the more laborious portion of the study. Two things limit the time for which the present data will have value. The occurrence of new syphilis in this group may be expected to assume such serious proportions in a few years that the sero-negative population will no longer be a control, nor the sero-positive population representative of syphilis in the portion of the community studied. The other limitation will be the change in residence which will inevitably occur and which will conceal deaths among this population. This is not serious until sufficient time elapses to make these registrants residents of their new community. Two or three years will be required to produce these changes, and possibly they will not occur for five years.

While the difference in mortality found in favor of serologic syphilis is not significant, when this is converted into a death rate a figure of 106 deaths per 100,000 is obtained. If the true specific death rate for syphilis among Negroes 18 to 45 is of this order, syphilis carries a serious hazard for young Negro males. The death rate for cancer among Negroes of all ages in Nashville is only 151 per 100,000. To reach a significant difference in mortality in the experience studied, a death rate exceeding 200 per 100,000 for age 18 to 45 is required.

The method presented is most adaptable to large populations with high prevalence rates for syphilis. States in which serologic testing was part of the Selective Service registration procedure already have accumulated two and one-half times as much experience for the positive portion of their 21–35 year registrants as was accumulated in Nashville through January, 1944. It is possible that significant differences could be determined in these states now, while in states with universal blood

testing laws the opportunity exists, by correct design of the serologic form, to identify the entire population in a manner which will permit the relation of deaths to the serologic status of the dead person.


## SUMMARY

The study of deaths in syphilis presents a real challenge. Present information is extremely limited, both by the nature of the disease and social implications which deter physicians from indicating this cause of death on death certificates. Specific death rates, applicable in other communicable diseases are deficient when applied to syphilis. Other methods of studying death have not been satisfactory for demographic purposes.

The deaths occurring among 15,345 Negro registrants in Nashville's ten Selective Service Boards have been studied. Deaths experienced among the sero-negative and sero-positive portions of this group have been compared with the expected deaths as calculated from Tennessee age, sex, and color-specific death rates for all causes.

The material is presented in order that the method used for collecting the information may be examined. The study was limited to civilian experience and civilian deaths to exclude the uncertain death reporting and unusual hazards encountered in the army. The Negro portion of the registrants in Nashville was analyzed because the group is small and syphilis is extremely prevalent in that group.

The results of the experimental study of Negro registrants are not conclusive. Some excess mortality was found in the sero-positive group. This excess does not approach the proportions of the possible error due to chance. The short experience of the small group of men studied made it unlikely that other results would be found. The method applied is such that future experience can be accumulated with little effort, and it is possible that restudy will provide conclusive evidence of the effect syphilis has upon mortality.

Material presented includes the final results for serologic examinations performed on Negro registrants of Nashville by Selective Service. Tables of death rates for sero-negative, sero-positive, and all Negro registrants of Nashville's ten Selective Service Boards are presented which indicate that factors of selection of Negro males for blood testing did not seriously distort the mortality information.


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# Development of a Community Rheumatic Fever Program

BERNICE G. WEDUM, M.D.

*Denver Area Rheumatic Fever Diagnostic Service and Department of Medicine, University of Colorado School of Medicine, Denver, Colo.*

THERE are indications that coördinated programs designed to meet all needs of the patient with rheumatic fever are favorably influencing morbidity and mortality [1, 2] although clear-cut proof is lacking.[3] Unfortunately most plans begin before the local prevalence of the disease is accurately determined. Lack of this knowledge will make future evaluation difficult. Although it is not yet known with certainty whether rheumatic fever programs are preventing illness or prolonging lives, substitution of good management for the neglect or overprotection which frequently characterizes the handling of these children is enough to make such programs worth while.

There have been recommendations by various groups that all components of a program be available before one is initiated.[4] This is greatly to be desired but in many areas it is not possible. The great lack is usually beds for long-term convalescence. There seems to be little doubt that institutional convalescent care or hospital schools give the best results with most bedridden rheumatic children.[5, 6] Yet this lack need not necessarily deter the inauguration of a program. Home care will be all that will be available in many areas for some time to come. The nature of rheumatic fever is such that individuals of all income levels must be reached. Even after the provision of convalescent beds many children will still receive care in their homes. There are other benefits derived from a rheumatic fever program even without an adequate foster or convalescent home. These include case finding, observation of siblings, home teaching, vocational guidance, follow-up in the schools, lay and professional education, and restoration to normal life of the child incorrectly labeled rheumatic.

In the discussion which follows an attempt will be made to show how a community may be organized when all the components of a complete rheumatic fever program are not present. The activities described below focus attention on the missing elements and stimulate the community to provide them.

## ORDERLY EVOLUTION OF A RHEUMATIC FEVER PROGRAM

In order to interest a few key people in the beginning, certain publications are of value.[2, 7, 12] A brief summary of the operation and results of the London County Council Rheumatism Scheme [7] with preliminary analysis of the facilities and needs in the community is also helpful.

## PREVALENCE STUDIES

There are several publications which summarize for rheumatic fever its importance as a cause of death in children,[2, 7] its prevalence in school children,[13, 14] and the prognosis.[15–17] These general statistics are helpful, but the figures which carry the most

weight are those which apply to the specific community involved. There are two presentations which are very effective. One is a table showing the principal causes of death in children aged 5 to 19 in the city and state concerned. This can easily be obtained by calculation from the U. S. Bureau of the Census records.[18] Rheumatic heart disease is the first cause of death among school children in many areas. A second presentation may show the comparative standing of the city and state. For example, in 1939–1940 Denver had the second highest mortality rate in children among the 25 largest cities in the United States. In this connection Hedley's figures for 1922–1936 [19] can be used as well as current census reports.

Prior to the initiation of the program it might be well to determine the amount of hospitalized and convalescent rheumatic heart disease, rheumatic fever and chorea in the community. Such a survey will arouse interest and provide another base line for future comparison.

Another preliminary procedure of value is the determination of the prevalence of rheumatic heart disease in a representative sample of school children.[7, 13] Such a study can be of great value in estimating the effect of a rheumatic program if repeated after 5 or 10 years. Ideally a nearby group of children which is not to receive the benefits of the program is also surveyed to serve as a control group. The principal difficulty lies in securing the services of a physician trained in the study of heart disease in children. One solution is to have this survey done by the physician who will do all or the major portion of the clinical work in the proposed rheumatic fever program. The health department of the public schools might employ such a physician part time for about 6 months prior to opening of the diagnostic services. Such studies furnish good material for local statistics of prevalence, establish a good working relationship with the doctors and nurses in the public schools, and provide a group of cases with which to start the diagnostic service.

A complete report may then be written which outlines the local problem, the ideal program, the facilities available in the community and how they can be adapted to the need.

### DIAGNOSTIC AND CONSULTATIVE SERVICES

Diagnostic and consultation services are the first requirement so that the children who are to receive the benefits of the program are accurately identified. The diagnosis in many cases requires laboratory, x-ray, and electrocardiographic procedures which are beyond the means of the average individual, and beyond the equipment of many physicians. Another matter to consider is that many children are erroneously diagnosed as having rheumatic fever or heart disease because of the presence of a few leg pains at night or a functional systolic murmur. It is as important to remove the rheumatic label from these children as it is to identify the child who has the disease.[20]

The health service of the public schools can play a major rôle in launching a diagnostic service. In the course of school health examinations a number of children are found who are thought to have heart disease. Indigent patients in this group can be the first studied. Children who have a physician are seen after the latter's permission has been obtained by the school health service. Later patients will be referred directly by physicians, public health and visiting nurses, clinics and other agencies. In every case a report of the findings should be sent to the source of referral and a copy to the school health service. A child with rheumatic fever or other condition is

directed to medical supervision, if he is not under care, or referred back to his own physician.

### A RHEUMATIC REGISTER

An accurate rheumatic register automatically evolves from the activities of a diagnostic service. This register has the names of children who are to receive a coördinated program of care and follow-up as described below. The superiority of a rheumatic register to a list obtained by reporting has been discussed elsewhere.[20] When a diagnostic service is available to which any child with manifestations suggesting rheumatic fever can be sent for study, the physician receives a report which is a valuable aid in the management of his patient. At the present time, in most localities, reporting the disease is usually an additional piece of paper work for which the physician receives nothing in return, while health authorities receive the name of a child who may or may not have rheumatic fever.

### EDUCATION

Parallel with the development of diagnostic services, a program of professional education may be instituted. Physicians should be reached first. Such education can take the form of a refresher course with outside speakers invited, an abstract service for physicians, a series of articles on the manifestations, differential diagnosis and treatment of rheumatic fever appearing in a local medical journal, and "rheumatic fever nights" at meetings of the medical society. The activities of the diagnostic service are in themselves a potent form of education.

Many errors in diagnosis and treatment are being made. One notable one is the frequent use of the sulfonamide derivatives in the treatment of acute rheumatic fever, which has been shown by several investigators to be not only ineffective but harmful.[21, 22] The articles published on this point simply have not reached many overworked doctors. It has been our experience that the great majority of busy physicians welcome such information if it is given in dignified and understanding fashion. It must be borne in mind that there is no disease in which the so-called physician-patient relationship is more greatly needed than in rheumatic fever. These children and young people must have a family doctor to whom they can refer for supervision and guidance, and this individual must have at his disposal expert consultation, up-to-date information, and coördinated facilities for care.

The same program of education should be instituted among nurses. This professional group is usually aware of the rheumatic fever problem, but many are not familiar with slight signs of activity, and fine points of nursing care both in the hospital and in the home. In a similar manner all groups concerned with the care of the rheumatic child, including social workers, home teachers, dietitians, and occupational therapists should be reached.

Only after the professional groups are educated should much attempt be made to reach the lay public. It is usually an error to arouse the public to a need before professional groups are ready to cope with it. Materials which can be obtained from the Metropolitan Life Insurance Company, the Children's Bureau, and the American Heart Association are invaluable.

### COÖRDINATION

Coördination of the agencies already existing which can supply care follows education of professional groups. A "nerve center" is needed through which all activities concerning the care of rheumatic children are integrated. No effort can be made to coördinate the services offered by the groups mentioned above until one is certain that these

groups are familiar with the special problems of rheumatic fever. For example, injudicious management of the child with slight cardiac damage can create a mental invalid. Education of these professional groups should precede coördination.

It is suggested that if no effort of this nature has been made previously or if confusion and overlapping of agencies exist, a small "pilot plan" of coördination be tried unofficially, enlisting the aid of a few interested family physicians and clinics and involving not more than 20 or 30 children. In this manner the kinks can be ironed out on a small scale before such service is offered widely.

This center must be one with which the private physician can quickly make any arrangements for home care, one through which reports can be efficiently transmitted, and where the rheumatic register will be maintained. Eventually these activities will probably be a part of municipal or state health departments. They will, however, range all the way from a small part of the duties of one public health nurse, working in a county where rheumatic fever is not very common, a part of the function of a diagnostic service in a moderate sized community, to a separate complex organization in a city of a half million or more. This center acts as a clearing house for all those associated with the management of the rheumatic child.

### FOLLOW-UP

This function falls logically to the school health service. In each school should be a file of rheumatic children and their siblings. Such children are reminded to visit their physicians every six months, are observed at intervals for slight manifestations of rheumatic activity and receive health educational material. Education is carried on through parent-teacher associations. Only some of the many possibilities are mentioned.[9] If this has not been tried previously it might be attempted in one school and, when running smoothly, put into effect throughout the entire school system.

Children with a clear-cut history of rheumatic fever or with obvious rheumatic heart disease, on whom the family doctor and the school physician agree are not always seen in the diagnostic service unless there is a problem. They should be reported to the coördinating center and added to the rheumatic register.

With the background of a community awakening to the rheumatic fever problem, efforts can be made to obtain those parts of a program which are lacking. For example, in Denver a large sum of money was given for a convalescent home partly as a result of the stimulus of a rheumatic fever program.

### PROBLEMS ENCOUNTERED

In setting up a rheumatic fever program it is necessary to have (1) one or two, or a few individuals with special knowledge of the disease who are willing and eager to devote a great deal of time to the project, and (2) a local sponsoring agency. In each community this agency will differ, depending on its strength, composition, and influence. A program sponsored by an outside agency lacks the local pride and enthusiasm so important for success. If an outside mode of organization is necessary, the sponsorship of a local community group should be enlisted as soon as possible.

A difficulty may arise if the sponsoring group undertakes the formulation of the program. The program can be formulated only by those thoroughly familiar with the disease. An example may be cited: A sponsoring group contemplated the creation of a diagnostic service where one of the rules was that each child be seen only once.

This reasoning by analogy with local tuberculosis diagnostic clinics would not apply to rheumatic fever, as those familiar with the disease know. However, once the sponsoring agency understands what is needed, its knowledge of local persons and situations frequently makes it better able to solve the problems involved in launching a program.

In drawing up the detailed plan of organization, rules of procedure, eligibility, and budget, much can be learned by studying published reports [10, 20, 23-28] and by writing for sample forms and charts.

In selection of the personnel for a diagnostic service, certain points are of great importance. Inevitably a great amount of attention centers around the heart. The individuals responsible for the evaluation of these children must have good ears, regardless of their specialty. The recognition of the rheumatic state is ultimately clinical, and at least one physician should have considerable experience with rheumatic children at all stages of the disease. A diagnostic service should never become simply a screening or classification center where the examination is carried only to the point of determining whether or not the child has rheumatic fever or heart disease. Aside from detracting from the quality of the examinations performed, there is a very practical reason in that it is frequently impossible to state that a child does not have rheumatic fever unless one can explain his symptoms on some other basis. A combination of an internist, a pediatrician, and one physician specially interested in rheumatic fever provides a team whose members supplement one another well.

Every effort should be made to obtain the services of the best trained people the community can offer. It frequently happens that individuals who are "naturals" as far as cardiology is concerned are not suited by inclination or temperament to be contact men in a political sense for a large rheumatic fever program; and the reverse is even more commonly true. Rarely these qualities are combined in one person. If not, two or more individuals must work together in the capacities best suited to them. A diagnostic service needs somewhere in its organization a physician who has the confidence of the great majority of doctors in the community, regardless of his special knowledge of rheumatic fever.

A few other points may be mentioned briefly. It is suggested that the diagnostic service conform to the standards for a Cardiac Clinic as outlined by the American Heart Association. The physician actually running the service should have adequate authority and responsibility, including the selection of other clinic personnel. It is wise to give a physician working full time in a rheumatic fever program consultation privileges to avoid losing such individuals just as they become of great value. Such a service may be a center of research and clinical training for interested doctors, especially school physicians. Residents, internes, medical students, and student nurses should be included if the service is located in a medical school.

The official approval of the local county medical society is very desirable. Because of the feeling concerning "socialized medicine," any program dealing with private patients is likely to be viewed with distrust initially, but with proper operation of the service this will be replaced by confidence and appreciation. The principle of free choice of medical care should guide the operation of the service.

When coördination of facilities for care is considered, a problem may arise in the form of weak or faulty local health organization so that the agency which might logically take on this function is

not suitable. It may be necessary for some other department to serve. The actual persons involved are really of the greatest importance. It is best initially to have such activities carried on by those who have deep interest in the rheumatic fever program, with a record of accomplishment and the confidence of the community regardless of their official connection.

When a rheumatic fever program is started for children it may be difficult to expand it to include young adults. The high incidence of rheumatic fever among members of the armed forces [29] indicates that, in the future, programs should not be inaugurated without including these young adults. It is disturbing to see persons in their twenties walk into a clinic with the arthritis of long undiagnosed rheumatic fever and associated well developed heart disease.

## FUNDS

Sources of funds for these programs include federal,[30] state, and municipal governments, the community chests, and a large number of benevolent organizations. The financing of a local program can be done either entirely by one organization or by several working jointly. Rheumatic fever deserves as prominent a place in the public eye as tuberculosis, poliomyelitis, and cancer. An American Council on Rheumatic Fever has recently been formed.[31] Possibly at some future date rheumatic fever will be included in a nation-wide campaign to raise money to combat all forms of heart disease. Ultimately such an organization would conform to whatever solution is finally made of the problem of large numbers of volunteer agencies competing with one another for community support.[32] The situation will vary so with different cities that only general statements can be made. However, it is suggested that rheumatic fever be included in the health activities of every community chest. Among other groups who have aided are tuberculosis associations, the American Legion, Lion's Clubs, and Parent-Teacher Associations.

## SUMMARY

1. Although it is desirable to have all components of a complete rheumatic fever program before one is inaugurated, in many areas this is not possible. It is suggested that plans be initiated, utilizing and perfecting what facilities are available. The operation of a program is an effective means of focusing attention on the components which are not present, and stimulates a community to provide them.

2. A rheumatic fever program may evolve in the following manner:

1. Prevalence studies
2. Diagnostic services and rheumatic register
3. Education of professional groups
4. Coördination of services already available
5. Education of the lay public
6. Organized efforts to obtain facilities not available

Certain parts of this program and problems that may be encountered are discussed in detail.

3. Young adults as well as children need the benefits of a rheumatic fever program.

4. All income levels should be served. Most rheumatic fever is seen by the family physician who requires at his disposal expert consultative and diagnostic services and coördinated facilities for care.

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# You Can't Pigeon-Hole Health

"Low income, bad housing and environment, ignorance, high incidence of sickness and mortality, low income—all these continue endlessly in a vicious circle. Health agencies must learn, as welfare agencies have been learning, that these recognizable defects of the common life cannot be remedied by themselves. It is not contended that a health agency can affect the wages of unskilled workers, nor remove them from slums, nor give them basic education. But it is significant that organizations whose purpose is to promote health and to prevent disease should give so little attention to these basic conditions. This is understandable only on the assumption that close devotion to the immediate demands of their specialized task shuts from them all awareness as to the other essentials of wholesome living. A vigorous and vital national health council, having as its objective the building of health to the highest point possible, would have to take cognizance of these basic factors and could at least add its voice to those calling for opportunity for fuller life for all the people."—Gunn, Selskar M., and Platt, Philip S. *Voluntary Health Agencies.* New York: Ronald Press, 1945. 364 pp. $3.00.

# Experiences with Rheumatic Fever in the Army Air Forces

CHARLES A. R. CONNOR, M.D.*

*Instructor in Medicine, New York University College of Medicine, New York, N. Y.*

THIS paper reviews some of the experience of the Army Air Force Rheumatic Fever Control Program. It treats briefly the relationship of rheumatic fever to group A streptococcal infections; chemoprophylaxis; therapy in the acute phase; and a new concept in the management of the convalescent phase.

No accurate statistics on the incidence of rheumatic fever in this country are available. An obvious reason for this state of affairs is the lack of specific knowledge of the etiology and also the lack of a specific diagnostic test. Since the clinical syndrome rheumatic fever presents a variety of signs and symptoms, none of which are pathognomonic, a positive diagnosis depends upon the critical evaluation of these data.

In our studies we were confronted with two major difficulties in the consideration of this diagnosis in atypical forms of the disease. The first was the reluctance to make such a diagnosis, because of the possible effect on the patient's future emotional and psychological well-being, as well as on his future insurability and employability.[1] This conservative attitude may be commendable, in view of the undue emphasis in some educational programs on the serious sequelae of rheumatic fever, but it prevents standardization in gathering figures on incidence. The second, in our opinion totally unjustifiable, was to accept the diagnosis on the basis of the therapeutic response to salicylates. Jones has called attention to this fallacy.[2] We have seen proven cases of rheumatic fever which had little or no subjective or objective response to large doses of salicylates. Conversely we have seen patients with bizarre arthralgias and myalgias whose symptoms were relieved with this type of therapy. Salicylates in large doses also can decrease the erythrocyte sedimentation rate, without altering the course of the disease.[3] During the course of salicylate therapy, with serum levels of 300 gamma per ml. or higher, Murphy has observed the development of characteristic rheumatic lesions in tendons, the heart, the lungs, and in other sites.[4]

## RELATION TO GROUP A STREPTOCOCCAL DISEASE

Table 1 shows the number of cases of acute rheumatic fever at six stations at which the criteria for diagnosis were standardized.[2] At all these posts the type of personnel and the military training program remained essentially unchanged over the period of 1943 and 1944. This table indicates that the disease was more frequent in certain sections of this country and that variations occurred from one year to the next. These variations could not be solely related to sulfonamide prophy-

* Cardiologist, New York City Department of Health. Formerly associated with A.A.F. Rheumatic Fever Control Program.

TABLE 1

| Location of Station Hospital | Cases of Acute Rheumatic Fever Admitted to Hospital 1943 | 1944 | Military Activity | Approximate Average Strength | Chemoprophylaxis 1943 | 1944 |
|---|---|---|---|---|---|---|
| Colorado | 387 | 373 | Basic Training, Technical Schools | 12,000 | None | [1] |
| North Texas | 58 | 87 | Basic Training, Mechanics Schools | 16,000 | None | [2] |
| Wisconsin | 94 | 106 | Technical School | 15,000 | None | [3] |
| South Dakota | 212 | 83 | Technical School | 14,000 | None | [4] |
| Illinois | 52 | 26 | Technical School | 15,000 | None | None |
| Iowa | 13 | 19 | Advanced Flying Training | 4,000 | None | None |

[1] Sulfadiazine prophylaxis used in winter of 1944. Experimental program. Results were inconclusive.
[2] Sulfadiazine prophylaxis used one day in winter of 1944 because of threat of meningococcus infections.
[3] Sulfadiazine prophylaxis used continuously for 21 days in April, 1944. See figures relating to "Post B," Holbrook, W. P., *J.A.M.A.*, 126:84–87 (Sept. 9), 1944.
[4] Sulfadiazine prophylaxis used in February and March, 1944. Hodges, R. G., *New England J. Med.*, 231:817–820 (Dec. 21), 1944. The author attributes the lessened incidence of rheumatic fever to the sulfa-prophylaxis.

laxis. A complete explanation of them is unknown to us. Grouping and typing of hemolytic streptococci were first performed in special laboratories at Air Force hospitals in the early part of 1944, so correlation of rheumatic fever and streptococcal disease are not available prior to this time.

The total number of rheumatic fever patients hospitalized in 1945 is not available, as the final reports following disposition have not been received. It is known, however, that the incidence was greatly reduced. The incidence rates for streptococcal diseases were also lower than those of previous years. A large amount of streptococcal disease during 1945 was caused by a sulfadiazine resistant group A type 17 organism, following which an appreciable amount of rheumatic fever might have been expected. The United States Navy had epidemics of respiratory disease caused by a sulfa-resistant type 17 streptococcus, with approximately 2 per cent of these cases subsequently developing rheumatic fever, according to Commander Coburn.

The first epidemic in the Air Forces of streptococcal disease caused by this type 17 strain broke out in a field on the Gulf coast of Mississippi late in December, 1944.[5] This field had an established special laboratory equipped to perform grouping and typing of streptococci by the capillary precipitin techniques of Lancefield.[6] Type 17 streptococcus had not been isolated from patients with respiratory infections admitted to the hospital nor from routine bacteriological surveys of samples of the post population in the three months immediately preceding the onset of the epidemic. It is estimated that at least 1,000 men became ill with respiratory diseases caused by this strain of streptococcus, even though the entire population of the field was placed on one gram of sulfadiazine daily as a prophylactic measure. The diagnosis was proved clinically and bacteriologically in 271 soldiers admitted to the hospital. Only one case of acute rheumatic fever developed.

Similar type 17 epidemics occurred in February and March, 1945, at the fields in Colorado * and North Texas.[7] The personnel of both of these fields were also placed on a regimen of sulfonamide prophylaxis, following which other types of hemolytic streptococci previously common were seldom found in throat cultures of individuals hos-

* In 1945, there was no basic training at this field, so that the strength was reduced by half and composed for the most part of seasoned men.

pitalized with respiratory infections. Six cases of rheumatic fever were admitted to the hospital in Colorado and 10 cases to the hospital in North Texas during the course of the epidemics. At neither field did rheumatic fever develop in an individual hospitalized for a respiratory infection caused by type 17 streptococcus. Four of the cases at the North Texas post had type 17 present in their throat cultures on admission for rheumatic fever.[8] This finding was considered to represent a carrier state, although previous infection could not be excluded.

At the other four fields listed in Table 1 there was no outbreak of streptococcus respiratory diseases caused by this type 17 organism. The field in Wisconsin had a sulfadiazine sensitive group A type 19 streptococcus epidemic. One-half of the school population at this post was placed on a sulfa-prophylaxis program; 22 cases of rheumatic fever occurred during that period (Table 2).[10] This experience will be discussed under the section on chemoprophylaxis.

Jennings and his coworkers [11] investigated the relationship of rheumatic fever to respiratory diseases for a full year at a large camp in Utah; their results are shown graphically in Chart 1. As a basis for this information, throat cultures were obtained on all enlisted personnel admitted from the camp to the hospital for acute respiratory diseases, including scarlet fever and pneumonia. These cultures were examined for hemolytic streptococci, which, when found, were grouped and typed by the Lancefield precipitin techniques.

The curve for rheumatic fever cases is plotted on a scale ten times larger than that for the other two curves. It includes only cases from the enlisted complement of the camp who had been stationed there for a minimum of two weeks.

As the authors point out, there are many reasons why these three curves should be taken as indices rather than actual measurements. Only hospitalized cases of respiratory diseases are included, whereas it has been noted by many observers that attacks of rheumatic fever may be preceded by respiratory infections too mild to require hospitalization. The incubation period of rheumatic fever is considerably longer than that of acute respiratory disease, and the rapid turnover of personnel may have resulted in the loss of patients in this stage of rheumatic fever.

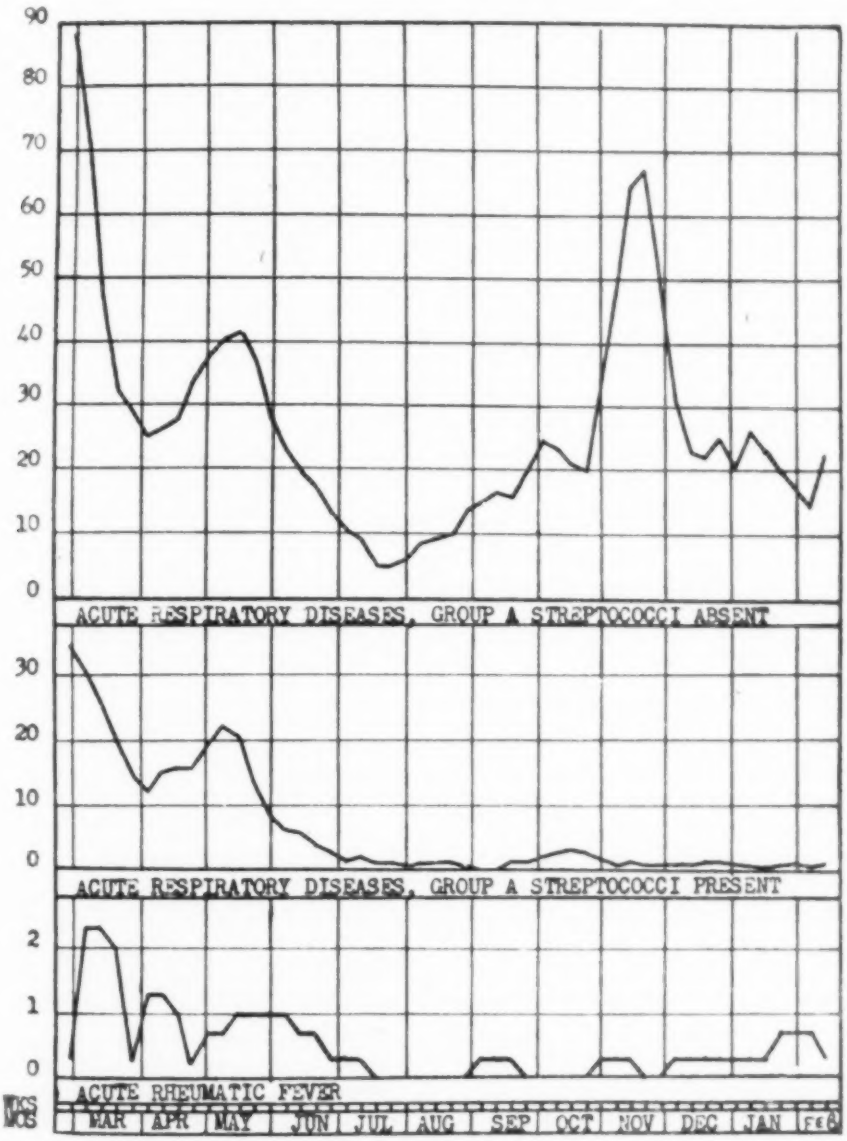
In spite of these qualifications, it is seen that the trend of the incidence of acute rheumatic fever follows closely that of group A streptococcal respiratory disease. This correlation occurred not only during a period of high incidence of group A streptococcal respiratory diseases (March to June) and a period of low incidence (July to September), but also during a period in which nonstreptococcal respiratory infections were frequent, although group A streptococcal diseases were almost absent (October to February).

Attempts to demonstrate a relationship between the incidence of acute rheumatic fever and individual types of group A streptococci were unsuccessful at this camp as has been reported by others.[9]

In the Rocky Mountain area where the incidence of rheumatic fever was highest for all the United States armed services and also in the Canadian Army,[12] one Air Force post, used as a training school for clerks, had relatively few cases of rheumatic fever and also a low rate for hemolytic streptococcal disease. (A special streptococcus laboratory was not established at this post: the hospital was equipped to do ordinary bacteriological examinations.) This post was located within a 25 mile radius of two other stations which had the greatest number of rheumatic fever patients and high streptococcal disease

CHART 1—The Relative Frequency of Respiratory Diseases and Rheumatic Fever, Kearns, Utah, February 19, 1944, to February 23, 1945
Three point moving averages of weekly cases

Respiratory diseases dated by admission, rheumatic fever by onset




rates each winter and spring. This post in the foothills of the Rocky Mountains was used as a control in a study of 120 rheumatic fever patients to determine the effect of altitude and climate on convalescence. Sixty patients were placed on this post while a comparable group of 60 cases was

evacuated by air to southern Arizona. All patients at the control station recovered clinically as well and as rapidly as at the southwestern field, and during a period of six months, there were no recrudescences of rheumatic fever.[13] Actually both groups were convalescing in areas of low incidence of group A streptococcal disease.

### CHEMOPROPHYLAXIS

Sulfadiazine prophylaxis was widely used in the Army and Navy during the war. In the discussion of the Navy program for the control of streptococcal infections Coburn states that the incidence of rheumatic fever among men receiving chemoprophylaxis was 15 per cent of the incidence in control groups.[14] In the Army Air Forces sulfadiazine was not used in the same manner or extent as in the Navy. Fortunately, we were not confronted with the serious epidemics that occurred in several Navy "boot camps."

A thorough study at a large technical school in Wisconsin conducted by Warren demonstrated no effect in the reduction of rheumatic fever.[10] Table 2 shows the total man-days of exposure of a control and treated (one gram of sulfadiazine daily) group and the actual number of cases of acute rheumatic fever hospitalized in each group. Calculating the number of cases expected in the treated group, using the control group as a base, showed that one case less than expected occurred.

Investigation of the effectiveness of salicylates and of sulfonamides in preventing the occurrence of acute rheumatic fever after the onset of an acute group A streptococcal respiratory infection was undertaken. In a single winter month at a Colorado post 275 acute respiratory infections, in whose throat cultures hemolytic streptococci were found, were divided into three groups.[15] Symptomatic therapy was given to 130 during their hospitalization; 15, or 11.5 per cent, developed rheumatic fever. Sixty-seven were given 2.6 grams (40 grains) of aspirin during their hospital stay and after discharge were given the same amount in one dose daily for 3 weeks; 5 or 7.5 per cent, developed rheumatic fever. Seventy-eight were treated with some type of sulfonamide during their hospital stay and for a period of 2 or 3 weeks thereafter; 3, or 3.8 per cent, developed rheumatic fever. It is believed that the series is too small to justify a definite conclusion that sulfonamide therapy was of value in the prophylaxis of rheumatic fever after the onset of a respiratory streptococcal infection. In another study involving patients with scarlet fever caused by either type 17, 19, or 30 streptococcus, conducted in a similar geographical area, the occurrence of rheumatic fever was highest among those treated with large doses of sulfonamides.[16]

TABLE 2

*Sulfadiazine Prophylaxis*

*January 5 to May 1, 1945*

| | *Control* | *Treated* |
|---|---|---|
| Man-Days Exposure | 292,520 | 394,560 |
| Acute Rheumatic Fever Admitted to Hospital | 10 | 12 |
| Estimated Cases, Control as Base | .. | 13 |

### THERAPY OF ACUTE RHEUMATIC FEVER

Penicillin was administered to 38 patients with acute rheumatic fever in a coöperative study at three Air Force hospitals.[17] The drug was given intramuscularly in doses of 25,000 units at 3 hour intervals for a total of 1,000,000 units. No benefit could be demonstrated in any patient, and definite aggravation of the course of the disease was evident in several cases.

In 1943 Coburn reported his experience with the intravenous administration of salicylate in this disease.[18] This was the first study in which the therapeutic response was correlated with the

actual plasma level of salicylates. The excellent results attained in controlling the infection and in preventing valvular heart disease stimulated further studies.

McEachern at a Colorado field investigated intravenous sodium salicylate therapy, following closely the procedure of Coburn.[19] The intravenous administration was continued until the patient's erythrocyte sedimentation rate dropped appreciably—at least 20 per cent. When this point was reached, oral treatment was substituted, using a total of 10 gm. of sodium salicylate and 5 gm. of sodium bicarbonate daily. This schedule was followed until clinical evidence of active infection had disappeared, and until the blood sedimentation rate remained at normal levels for a period of two weeks. If clinical or laboratory evidence of carditis had been present the salicylates were administered for an additional 2 weeks.

Alternate cases admitted to the hospital wards were treated with oral salicylates exclusively in the dosage as outlined above. Thirty-seven cases were studied in each group. A comparison of results was made on the basis of temperature response, pulse response, joint response, and the time it took the leucocyte count and erythrocyte sedimentation rate to return to normal. The oral method of treatment was more satisfactory in all these comparisons. Blood salicylate levels were obtained in the orally treated group that closely approximated those obtained with intravenous therapy.

The toxic effects of intravenous salicylates were serious and frequent. Six cases developed an acute psychosis. Almost all presented a combination of such symptoms as nausea, vomiting, and tinnitus. This contrasted sharply with the orally treated cases, where fewer than 25 per cent complained of any discomfort, and then usually only mild nausea or tinnitus.

In both groups there was evidence of valvular injury, as judged by the development and persistence of diastolic murmurs along the left sternal border or loud rough apical systolic murmurs, associated with cardiac enlargement. Five such cases occurred in the intravenous treatment group.

A similar clinical study of salicylate therapy was made at a field in Wisconsin.[20] Forty-eight patients received intravenous salicylates and 50 oral salicylates of 10 or more gm. daily; 7 developed significant cardiac murmurs not present on admission to the hospital, or showed progression of preëxisting heart disease. Another group of 88 patients received smaller doses of sodium salicylates, and the blood levels in a few studied cases never reached 300 gamma per ml.; 7 of this group developed significant cardiac abnormalities.

### MANAGEMENT OF CONVALESCENT PHASE

A frequent and a major problem, observed during the handling of patients with rheumatic fever, is the development of anxiety states. Many of the contributing factors to these neurotic reactions in the Army have been discussed by Ershler.[21] In an attempt to minimize these anxiety states, in the fall of 1944 patients were ordered transferred to convalescent centers within 2 weeks of the onset of acute rheumatic fever. This in effect placed the patient under the constant care of only one group of physicians.

In the early part of 1944, Robertson, Schmidt, and Feiring,[22] at a convalescent center in Florida were impressed by the large number of cases who on arrival had disabling anxiety neuroses. After personal interviews they believed that the mental state was largely fostered by the preceding therapeutic program, which demanded absolute bed rest throughout, and even beyond the acute stage of rheumatic fever. They challenged the concept that confinement

to bed implies the ultimate expression of rest. These authors define rest as "maximum ease and comfort, physically, mentally, and emotionally. Bed rest ceases to be rest when the patient is no longer at optimum comfort in his environment."

The change in policy in the convalescent program enabled these physicians to treat patients in the acute phase of the disease. Accordingly a group of one hundred patients in this phase were permitted to sit in or out of bed and to walk a short distance to the latrine. The presence of joint symptoms, of changing cardiac murmurs, of varying P-R intervals, of increased erythrocyte sedimentation rates, of subcutaneous nodules or other signs of acute activity were not considered deterrents to limited physical activity. The only exceptions were patients with heart failure or with incapacitating joint inflammations.

Results are admittedly difficult to evaluate, but these patients slept soundly, their appetites were better, as reflected by gains in weight, their bowel habits were more regular, and their morale for recovery was improved. During these first periods of activity the patients were taking therapeutic doses of salicylates. No control cases were observed at the same time for psychological reasons. In this group, however, the clinical and laboratory phenomena indicative of acute rheumatic processes diminished as rapidly as in the previous year when strict bed confinement was practised. At the end of 6 months, no soldier of this group had been discharged from the Army because of an anxiety neurosis.

The final conclusion of the authors is quoted: "We recognize that this study does not warrant any dogmatic conclusions at this time; nor do we advocate indiscriminate physical activity. Nevertheless, it does invite attention for reëvaluation of the currently accepted policy of prolonged bed rest, with its disadvantages, in the treatment of acute rheumatic fever."

## SUMMARY

1. Studies at Army Air Forces hospitals during the war lend support to the previous reports of group A streptococcal disease as the inducing infection in acute rheumatic fever attacks.

2. The prophylactic administration of sulfadiazine to large numbers of troops for varying periods of time has not been conclusively shown to lower the incidence of rheumatic fever. Such procedures have caused a prompt reduction in the incidence of hemolytic streptococcal respiratory disease, except in the case of the sulfadiazine resistant type 17 streptococcus.

3. Neither salicylates nor sulfonamides, when administered after the onset of a group A streptococcal respiratory infection and continued for the following 3 weeks, were effective in preventing the onset of acute rheumatic fever.

4. Penicillin in moderately large doses has no beneficial action on the acute rheumatic infection.

5. The use of massive doses of salicylates either intravenously or orally has not protected against the development of valvular heart disease. Blood plasma salicylate levels of more than 300 gamma per ml. are readily attainable by oral administration. Massive doses given intravenously produce severe, though transient, toxic reactions in the majority of cases.

6. A major problem in the convalescent management of rheumatic fever patients is to forestall the development of cardiac neuroses and anxiety states. The present concept of complete bed confinement as true rest has been challenged. It is desirable to investigate further "the value of judicious physical activity as a component part of the therapy of rheumatic fever."

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## Best Sellers in the Book Service for February

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**AMERICAN PUBLIC HEALTH ASSOCIATION**

# Institutions Accredited by the American Public Health Association to Give the Degree of Master of Public Health (Diploma of Public Health in Canada) for the Academic Year 1946-1947

This list is released by the Executive Board of the American Public Health Association as of January 25, 1946, and includes those institutions from which requests for accreditation had been received to that date. Additional applications will be acted upon in due course.

The criteria governing accreditation for the academic year 1946–1947, as approved by the Committee on Professional Education of the American Public Health Association on January 11, 1946, and by the Executive Board on January 25, 1946, follow the listing.

Columbia University School of Public Health
Harvard University School of Public Health
The Johns Hopkins School of Hygiene and Public Health
University of California School of Public Health
University of Michigan School of Public Health
University of Minnesota School of Public Health
University of North Carolina School of Public Health
University of Toronto School of Hygiene
Yale University School of Medicine, Department of Public Health

NOTE: See page 953 of the *American Journal of Public Health*, September, 1945, for Editorial entitled "Accreditation of Schools of Public Health."

## MINIMUM REQUIREMENTS FOR INSTITUTIONS TO BE ACCREDITED FOR THE DEGREE OF MASTER OF PUBLIC HEALTH (DIPLOMA OF PUBLIC HEALTH IN CANADA) *

Adopted by the Committee on Professional Education of the American Public Health Association, January 11, 1946.

*The Institution*

1. Any institution to be accredited must be a member of the Association of American Universities, or present evidence that it may reasonably be considered as qualified for such membership.

2. The school, faculty, or council administering courses in public health must have such practical autonomy that requirements for the degree are effectively controlled by the public health faculty.

3. The teaching of public health must be under the direction of a full-time teaching faculty, of acceptable quality and experience, which must include (in addition to assistant professors and others of lower rank and in addition to part-time appointees):

a. One member of professorial grade as director of the school (or department) and at least two other members of professorial or associate professorial grade—all three primarily responsible to the administration of the school, and

b. At least three other members of professorial or associate professorial grade, either primarily responsible to the school or giving full time to the university and

* These criteria will govern accreditation for the academic year 1946–1947. They may be modified for application after that date; and are likely, in some respects, to be made more stringent. It is the aim of the committee to communicate changes in these criteria to accredited schools at least nine months before the beginning of any academic year.

carrying specific major responsibility for teaching and research in the school. Such a minimum faculty could provide for a body of graduate students in public health, totalling not more than approximately thirty such students.

4. The school or department must have an assured minimum basic annual income adequate for its teaching and research functions and for meeting the various criteria outlined. Such income should be construed to include income from endowment of the school, contributions made from general university funds and grants made over a period of at least five years from sources outside the university. Under the second heading may be included proper allowance for time devoted to instruction of public health students by members of other university faculties.

5. Proper housing must be available, including lecture rooms, seminar rooms, and adequate laboratory facilities for the teaching of subjects in the field of microbiology (including microscopes, culture media apparatus, etc.); for the teaching of vital statistics (including calculating machines for student use, and apparatus for chart making, with tabulating machinery accessible for demonstration purposes); and for the teaching of sanitary engineering (including laboratory facilities for the examination of water and sewage and for the demonstration of the basic principles of hydraulics).

6. Library facilities are essential to the extent of at least 3,000 volumes in the general field of public health (including such special topics as epidemiology, microbiology, vital statistics, sanitary engineering, medical economics and medical sociology, nutrition, and the like), and current periodicals (not including health department reports) to the number of at least 50 in the fields mentioned above.

7. There must be available conveniently located administrative units of public health services, which can be utilized for observation and criticism in the basic courses for the Master of Public Health, and which are of sufficiently high quality to make such observation fruitful.

*The Course*

8. Candidates to be admitted for the degree of Master of Public Health (Diploma of Public Health in Canada) may be either

a. Holders of the degree of M.D., D.D.S., or D.V.M. or equivalent degree, from an acceptable institution; or

b. Holders of a bachelor's degree with adequate training in mathematics and the natural sciences including chemistry and biology; and also qualified in some professional capacity for postgraduate education in public health; and must in addition have either

x. Professional academic qualifications in engineering, nursing, education or postgraduate work in other fields of public health; or

y. Three years of experience in responsible public health practice.

9. The length of the course shall be not less than one academic year of 32 weeks.

It is highly desirable that the candidate shall have had practical public health experience in the form of supervised field service or in a position involving the exercise of substantial initiative and responsibility. This experience should preferably be obtained prior to entrance into the school. In some schools, candidates not so equipped on entrance are required to complete three months of practical work in the field before receiving their degree.

10. The following courses are among

those generally offered in schools of public health:

a. Public Health Administration
b. Sanitation
c. Microbiology
d. Vital Statistics
e. Epidemiology
f. Physiological Hygiene
g. Nutrition
h. Public Health Nursing
i. Health Education
j. Economic Factors in Health
k. Mental Hygiene
l. Public Health Law
m. Industrial Hygiene
n. School Health
o. Maternal and Child Health

It is believed that it would be highly undesirable to make standard requirements with regard to any particular courses of instruction. It does seem important, however, that the student—at some point in the M.P.H. course (or prior to that course)—shall receive instruction in the following basic fields:

*A. Basic Public Health Sciences*

(1) The nature and functioning of the human organism, and the personal behavior which influences its well-being, including nutrition and mental hygiene.

(2) The nature and behavior of various forms of parasitic life (including viruses); their interaction with the human body as demonstrated by clinical and immunological reactions; the modes in which such microorganisms are transferred from host to host in the course of their epidemiological history; and the ways in which such dissemination may be controlled.

(3) The physical environment as it influences health, including not only the classical problems of environmental sanitation, but also those relating to housing and industrial hygiene.

(4) The social and economic factors which influence the health of the individual and of the community, and the influences of sickness on the social and economic status of the individual and the community.

(5) The nature and sources of quantitative information bearing on the health of the people, and its numerical presentation and analysis.

*B. Public Health Practices*

(6) The principles of applying the basic sciences listed above to community health and welfare. This involves the elements of sound public administration as applied to official and voluntary health agencies, including office management, budget making, personnel relations, and public health law; and includes also the wide field of public relations as influenced by health education and community organization.

11. There must be opportunity for advanced specialization in one or more of the fields listed under (10) above or in such special fields as tuberculosis control, venereal disease control, or tropical medicine. There will be little time available in the M.P.H. year for advanced specialization; but basic work can be conducted effectively only in an atmosphere of advanced scholarship and with the essential stimulus which comes from the conduct of productive research by the faculty and advanced students.

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# Guarding the Health Department

"The voluntary health agencies, acting in the spirit of our kind of democracy, have often found themselves undertaking to guard the common interest by defending and promoting, and when necessary criticizing, the public health institutions and officials. There is nothing presumptuous in this. It is a proper exercise of the citizen interest in its tax-supported agencies. Such action by citizens or groups of citizens emerges normally out of the major purposes of a voluntary health agency and out of the increasing reliance upon public understanding and public acceptance of new doctrines regarding the prevention of disease and the promotion of health. Such activity may, indeed, be considered an aspect of the educational function of the voluntary health agency and is perhaps exercised too little rather than too much.

"It takes real vision and leadership to see when and where the private citizens concerned with the health of the community should rally to the defense of their health department, should fight for its standards or for raising the standards, should uphold its unpopular decisions in times of emergencies—and should, on occasion, criticize the administration. The health department which in the past often had its origin in the fear of people in times of great epidemics, is still thought of by some as the disturber of equanimity and the purveyor of dire warnings. It is the task of the voluntary health agencies to develop understanding until the feeling is firmly established in the citizen's mind that the health department is truly *his* health department. The rare health officer can bring this about himself; the average health officer needs the voluntary health agency more often than he realizes."—*Voluntary Health Agencies*. Gunn and Platt. New York: Ronald Press, 1945. 364 pp. $3.

# Public Health Aspects of Dehydrated Foods*

*Food and Nutrition Section*

DEHYDRATION, as applied to foods, implies the removal of water under controlled temperature and humidity conditions. With this definition in mind, the present report omits fruits, which, with the exception of apples and prunes, are generally sun-dried.[1]

The dehydration of foods, particularly vegetables, eggs, and milk, has greatly increased during the present emergency. The past history of the industry, as well as the commercial methods used, have been presented elsewhere,[1, 2] and will not be gone into here. The expansion of the industry, particularly as it pertains to vegetable dehydration, is considered by many as a war measure. Yet at the 1944 annual meeting of the National Dehydrators Association proposals were submitted for an extensive research program to aid in post-war production. What course the industry may take in the future will, of course, depend upon consumer acceptance of dehydrated foods, and the energy and resourcefulness displayed by dehydrators in developing markets and producing quality products. A few surveys have already been made in various cities relative to consumer acceptance of such dehydrated foods as vegetables and soups.[3, 4]

Because of the rapid expansion in production of dehydrated foods, little concerted attention, except in the case of dried egg powder, has been devoted to their public health aspects. It is the purpose of the committee to examine available data pertaining to the microbiological and nutritional aspects of dehydrated foods, and where advisable to submit recommendations for future action.

The fundamental difference between the bacteriology of dehydrated foods and canned foods is that the former are never sterile. Haines and Elliot[5] have pointed out that three basic requirements must be met by dehydrated foods to obtain a bacteriologically satisfactory product:

1. Conditions of manufacture must be such that, should toxigenic organisms, e.g., *Clostridium botulinum*, Staphylococci, and perhaps other organisms, be present in, or gain access to the commodity before or during processing, no bacterial toxins are formed.

2. The dehydrated product should not contain organisms likely to be pathogenic to man by the mouth, e.g., *Salmonella* and dysentery bacteria.

3. It is desirable that the general bacterial content of the product shall be reasonably low so that no decomposition or development of undesirable flavor occurs over the period of reconstitution. Special problems may arise if the dehydrated product is to be incorporated into some other food whose water content is high enough for bacterial growth to occur.

Theoretically, groups of organisms whose presence in foods may be considered dangerous include spore-forming anaerobes represented by *Cl. botulinum;* enteric organisms of the typhoid, paratyphoid, dysentery, and *Salmonella* groups; and certain staphylococci. Some epidemiologists would perhaps

* Report of the Committee on Foods (Except Milk).

COMMITTEE ON FOOD (EXCEPT MILK)
Organized 1932. Published reports: *Year Books* 1933–1934, 1934–1935, 1935–1936, 1936–1937, 1937–1938, 1939–1940, 1940–1941, *A.J.P.H.*, July, 1945.

include streptococci. From data available, neither dysentery organisms nor *Cl. botulinum* have ever been found in dehydrated foods but, as explained later, *Salmonella* and staphylococci have been demonstrated. The significance of their presence is complicated by the fact that it is not known whether their number is sufficient to cause symptoms of poisoning. Nor is it known whether *Cl. botulinum* can multiply under conditions prevailing when foods are dehydrated; but as Haines and Elliot have pointed out, the theoretical possibility cannot be dismissed.

Aside from the microbiological aspects of dehydrated foods and their relation to public health, the possible loss of nutrients during processing cannot be overlooked. Considerable data have accumulated in this field relative to dehydrated vegetables and eggs, but there is a paucity of information in the case of dehydrated fish. Few data are available indicating the loss of nutrients by rehydration of dehydrated foods.

## DEHYDRATED VEGETABLES

There has been a tremendous increase in the production of dehydrated vegetables during the present emergency (Table 1).

As of July 1, 1944, approximately 30 per cent of the entire production came from California; 18.5 per cent from Idaho, practically all of which was potatoes; 6 per cent from New York; Washington 5.5 per cent; and 5 per cent each from Maine and Oregon. The remaining 30 per cent originated among the other states of the country.

*Microbiological aspects*—Because of their proximity to the ground, vegetables are liable to contamination by soil bacteria, as well as infection from human sources by handling during preparation for dehydration. Washing and subsequent blanching will reduce the flora, but recontamination will occur during traying and packing.[6, 7]

Prescott [8] and Prescott, Nichols, and Powers [9] were probably the first to make a bacteriological study of dehydrated vegetables 25 years ago. They found none of the vegetables investigated to be sterile, and practically all the organisms found were of the soil and water type, the latter predominating.

TABLE 1

*United States Production of Dehydrated Vegetables 1919 to 1944–45* [1]

| Year | Plants Operating | Quantity | Value |
|---|---|---|---|
| | Number | 1,000 lbs. | $1,000 |
| 1919 | 25–30 | 10,346 | 2,643 |
| 1921 | [2] | 3,776 | 453 |
| 1923 | [2] | 4,016 | 321 |
| 1925 | [2] | 1,276 | 190 |
| 1931 | [2] | [2] | 252 |
| 1939 | [3] | 5,640 | 522 |
| 1941–42 | 15–20 | 15,000 [4] | 8,000 [5] |
| 1942–43 | 65–70 | 75,000 [4] | 40,000 [5] |
| 1943–44 | 142 | 184,000 | 85,000 [5] |
| 1944–45 | 130 [4] | 196,041 [6] | |

Source: 1919 to 1929, U. S. Bureau of Census; 1941–45, War Food Administration, U. S. Dept. Agr.

[1] Figures not strictly comparable because of changes in classification.

[2] Not available.

[3] It was reported that 6 dehydrating plants were operating before 1940, and that only 4 of these were of importance.

[4] Approximate.

[5] Estimated.

[6] Preliminary.

Agar plate counts ran from 60 to 1,600,000 per gm.; while mold counts varied from less than 20 up to 600 per gm. In laboratory tests Prescott inoculated stringless beans, parsnips, tomatoes, and spinach with pure broth cultures of *Bacillus coli, B. typhosus, B. paratyphosus* A and B, *B. enteritidis, B. paracoli, B. subtilis* and *B. welchii.* The vegetables were dehydrated at 80° C. (176° F.) for 4 hours. *B. subtilis* was found to have survived dehydration, while organisms resembling *B. typhosus* and the paratyphoid forms in some respects, but not typical, were found. Further work under commercial conditions of dehydration showed destruction of all or-

TABLE 2

*Occurrence of Bacteria in Dehydrated Vegetables (Condensed from Haines and Elliot)*

| *Product* | *Plate Count, Organisms per gm.* | *Flora* |
|---|---|---|
| Carrots | 1,000 to 100,000,000 | Micrococci, white non-hemolytic coccus, sporing aerobes, molds, *actinomyces*, coliforms of the aerogenes and fecal types. Clostridia and thermophiles only occasionally. |
| Cabbage | 1,000 to 1,000,000 | Micrococci, coliform (aerogenes and fecal), sporing aerobes, enterococci, *viridans* streptococci, small Gram-positive rods. Clostridia and thermophiles occasionally. |
| Potatoes | 100 to 1,000,000 | Sporing aerobes, white and yellow micrococci, coliform (chiefly *aerogenes*), diphtheroids, Gram-negative white cocci, *actinomyces* and molds. Clostridia and thermophiles occasionally. |

ganisms with which the material had been inoculated. Prescott points out that these results should be considered only preliminary. Later researches by Clague [10] showed that dehydration will not completely kill *B. coli* if present.

Although there has been some research carried out in this country since Prescott's report [6, 7, 10, 11, 12] on the bacteriology of dehydrated vegetables, more must be accomplished before a clearer picture can be obtained. Recent data summarized from researches of British investigators by Haines and Elliot [5] are given in Table 2.

Vaughn, Stadtman, and Kueneman [6] have surveyed a number of dehydration plants to determine the microbial population of the finished products. They found that overloading of the trays contributed to a large bacteria count in the finished product. Other factors influencing the count were post-blanching contamination by unclean hands of the workers, dirty trays and other inadequately cleaned equipment, and the use of polluted water. They found counts as high as 1,000,000,000 per gm. in spoiled, dehydrated potatoes, the most predominant types being the non-spore formers *Aerobacter aerogenes* and spore formers similar or identical to *Bacillus megatherium*. In soured dehydrated onions, lactic acid organisms tentatively identified as *Lactobacillus plantarum* and *L. brevis* were found along with coliform organisms. Both Clague [10] and Kinter and DeLay [11] found lactose fermenters not of the coliform type in dehydrated vegetables. Hucker, et al.[7] also found lactic acid and spore-bearing rods in two dehydration plants studied.

Hucker, et al.[7] carried out studies in 12 dehydration plants and of dehydrated potatoes, beets, and carrots. In 9 of these 12 plants the food was contaminated with members of the coliform group. In approximately 80 per cent of the cases, presumptive tests could be secured for coliform organisms on the finished dehydrated vegetables just prior to final packaging.

There are no bacteriological standards for dehydrated vegetables. The Quartermaster Corps controls the quality of its dehydrated products by means of specifications, plant supervision, product inspection, and laboratory examination.[13] It should be pointed out that these specifications do not include bacteria counts, but are chiefly physical. In some cases, special sanitary inspections are carried out by personnel of the Veterinary Corps at the request of the procuring agencies.

The moisture content at which de-

hydrated vegetables are dispensed would probably not permit bacterial growth. If properly protected from moisture pick-up, Prescott, Nichols, and Powers indicate that bacteria in the product will decrease during storage.[9] Kinter and DeLay[11] found that dehydrated cabbage having an initial count of 1,058,000 decreased to 10,000 upon 10 weeks' storage. Vaughn, et al., on the other hand, state that unpublished data by them indicate that under ideal storage conditions the microbial population may persist for long periods with little or no decrease in numbers.

*Nutritional aspects* — The nutritive value of dehydrated vegetables will depend upon the quality of the raw product, speed and care in handling, method of blanching, and rapidity of dehydration.

There will be some loss of minerals, proteins, and water soluble vitamins during blanching, and in general this loss is greater in water blanching than in steam blanching.[14-17] In the United States, the majority of vegetables are steam blanched. Doty, et al.[18] have reported no loss of calcium or phosphorus during blanching of carrots.

Improvements have been attempted in methods of dehydration with the purpose of enhancing appearance, palatability and vitamin retention. Perhaps the most recent innovation has been dehydration in natural gas or methane. It is claimed that retention of vitamin C is greater using this method than when carried out in air.[19] Tiller, Litkenhous, and Tubreville[20] have experimented with infra-red dehydration. Considerable work has been done on the use of sulfur dioxide to retard deterioration of dehydrated potatoes and cabbage. Sulfur dioxide also aids in preserving vitamin C potency, but destroys thiamine.

Morgan, et al.,[15] in a study of limited scope, found vitamin losses in blanching and dehydrating vegetables in commercial practice as shown in Table 3.

TABLE 3

*Losses of Vitamins in Commercially Produced, Freshly Dehydrated Vegetables (Condensed from data of Morgan, et al.)*

*(Expressed as per cent of the content of corresponding fresh samples)*

| | Per cent Loss in | | Cumulative Loss |
|---|---|---|---|
| | Blanching | Dehydrating | Per cent |
| Niacin | 0–33 | 0–30 | 0–33 |
| Pantothenic acid | | 0–30 | 0–30 |
| Thiamine | 0–37 | 11–38 | 0–56 |
| Ascorbic acid | 0–25 | 0–71 | 0–83 |
| Riboflavin | 0–10 | 0–30 | 0–30 |
| Carotene | 5–15 | 14–31 | 0–40 |

In the light of present information it can be said that losses of vitamins, especially ascorbic acid and thiamine, during the commercial production of dehydrated vegetables, are large, and this factor will be of importance if such foods become an essential part of the diet.

A knowledge of the vitamin content of dehydrated foods is of importance where nutritional evaluation is desired, but the usefulness of published data is questionable unless the age of the sample at the time of analysis is indicated. Pavcek and Elvehjem[21] have published such data, but unfortunately the age of the samples is not stated.* Morgan, et al. have compiled similar data and, although the samples analyzed are limited, their age at time of analysis is stated.

During the storage of dehydrated foods there is a loss of vitamins. Extensive research has been undertaken by many investigators in the attempt to decrease this loss by improved packaging and sealing in an inert gas. The most recent report has been that by Neuman, Wilson, and Van Wazer, Jr.[22] Heberlein and Clifcorn[23] found that an inert atmosphere favored the

* The committee has been informed (private communication) that the samples were analyzed "within a few months after dehydration."

retention of carotene and ascorbic acid when dehydrated vegetables were stored at room temperatures, but the protective action of an inert gas was greatly reduced with increased storage temperatures. An inert gas had no significant effect on thiamine or riboflavin retention. Riboflavin appears to be quite stable in dehydrated vegetables. Increased storage temperatures favored the destruction of ascorbic acid, thiamine, and carotene. Beardsley, Prindle, and Stevens [24] also found that packing in an inert gas favored the retention of ascorbic acid and carotene, while it had no effect on the thiamine content. These investigators found no consistent effect of temperature on the stability of carotene. Tressler, et al.,[16] on the other hand, reported relatively large losses of carotene at all storage temperatures above —40° C. (—40° F.). Doty, et al. found that dehydrated carrots stored at 21.1° C. (70° F.) in glass containers showed considerable loss of carotene, while there was little loss at a storage temperature of 17.7° C. (62° F.) and at 4.4° C. (40° F.).

The effect of lower moisture content of the dehydrated vegetables on retention of vitamins has been investigated. Chace [25] believed that low moisture content favored decreased loss of carotene and ascorbic acid during storage. Tressler, et al.[16] also shared this belief, but Heberlein and Clifcorn [23] found that, with the possible exception of decreasing the thiamine content of cabbage, the additional drying of beets, cabbage, and carrots to a lower moisture content than customarily attained had no significant effect on the vitamin content before or after storage.

Although dehydrated vegetables may contain significant quantities of vitamins when they reach the consumer, improper preparation for the table will cause appreciable losses. Fenton and Barnes [26] found that excessive quantities of cooking water caused a marked decrease in the amount of thiamine retained in the vegetable, due to the leaching action. Whether or not the vegetable was rehydrated before cooking, time of rehydration and rapidity of cooking all had an important bearing upon retention of water-soluble vitamins.

### DRIED EGG POWDER

Although dried egg powder was produced before World War II, output has greatly increased during the war period, chiefly to satisfy military and Lend-Lease demands.

TABLE 4

*Dried Egg Production in the United States*[1]

| | *Whole* | *Albumen* | *Yolk* | *Total* |
|---|---|---|---|---|
| | *lbs.* | *lbs.* | *lbs.* | *lbs.* |
| | 000 omitted | 000 omitted | 000 omitted | 000 omitted |
| 1939 | 184 | 2,305 | 7,550 | 10,039 |
| 1940 | 392 | 1,916 | 5,179 | 7,487 |
| 1941 | 31,241 | 4,391 | 9,648 | 45,280 |
| 1942 | 266,127 | 2,253 | 7,269 | 235,649 |
| 1943 | 252,903 | 2,093 | 6,976 | 261,972 |
| 1944 | 311,369 | 2,310 | 7,063 | 320,742 |

[1] Bureau of Agricultural Economics, U. S. Dept. Agr.

*Microbiological aspects*—Hartsell [27] has listed the factors largely responsible for the presence of bacteria in dried egg powder as:

1. Number and kind of bacteria in the liquid whole egg
2. Temperature of processing and storage
3. Activity of lysozyme
4. Whether or not the eggs are pasteurized before breaking
5. Evenness and method of drying
6. Moisture in the finished product

Two of the factors listed: namely Nos. 3 and 4, could perhaps be omitted because some investigators see no reason for assuming the activity of lysozyme, and eggs are not pasteurized before breaking, nor has such a technique been used in the past.

Bacteria specifications, which at present should be considered as tentative, have been established for the purchase of dried egg powder by certain

government agencies. The specifications of the War Food Administration require that the plate count should not be in excess of 300,000 per gm., and *Escherichia coli* should not be present in 0.001 gm.[28] The Quartermaster Corps' tentative specifications permit a maximum plate count of 200,000 per gm. and a yeast-mold count of not more than 100 per gm. Higher counts are accepted with a penalty.[29] In 1943 the British Ministry of Food established standards for Grade A and Grade B powder[30]:

*Grade A powder* (prime powder for use in fresh egg dishes)—total viable count after 48 hours incubation at 37° C. shall not exceed 500,000 per gram, with *E. coli* absent from 1/100 gm.

*Grade B powder* (residual fractions, for baking purposes only)—no limit for viable count, but *E. coli* absent from 1/1,000 gm.

These standards were modified for the 1944 season in that determination of coliform organisms and *E. coli* in Grade A powder was dropped.

Gibbons and Fulton[31] and others have pointed out that the number of bacteria present in dried egg powder gives some indication of the sanitary conditions prevailing in the breaking and drying plants. In this connection it is interesting to note that more recent researches indicate that direct counts rather than plate counts reflect more accurately the conditions under which the eggs were handled.[34, 35] Gibbons and Moore[32] state that there is little relationship between total viable count, coliform and *E. coli* content and the presence of *Salmonella* organisms.

Considerable research has been accomplished on the bacterial flora of dried egg powder, particularly the presence of organisms of the *Salmonella* group, and their relation to public health. Unfortunately much of the work on *Salmonella* remains unpublished. *E. coli* has been found by numerous workers, and Stuart, Hall, and Dicks state that organisms of the coliform group remain viable during storage of the product.[33] Reports have been made by British investigators[42] of the presence in dried egg powder of coagulase-positive staphylococci, viridans streptococci, and hemolytic streptococci; *S. albus*, *Proteus*, *coli* (most often aerogenes, but sometimes fecal) pink, yellow, and white micrococci, sarcinae, diphtheroids and other small Gram-positive rods, *Clostridium sporogenes*, and *Cl. welchii*. Enterococci were of frequent occurrence.

The organisms of greatest pathogenic significance are *Salmonella*, hemolytic streptococci, and coagulase-positive staphylococci. However, Gibbons and Moore[36] state "Whether the contamination of egg powder with organisms of the *Salmonella* group can be regarded as a health hazard is debatable." Organisms of the *Salmonella* group have been reported in dried eggs by numerous investigators.[32, 37, 38] Experiments by Gibbons and Moore[36] have shown that 99 per cent of the *Salmonella* in liquid egg are killed during spray-drying where the air inlet temperature is 121° C. (250° F.) and the air outlet temperature is between 60° and 66° C. (140°–150° F.). The greater the initial contamination, the greater the survival upon drying. It should be pointed out that this work was not done under plant conditions.

*Salmonella* may be introduced into dried egg powder by human carriers or by contaminated eggs. In this connection it should be pointed out that there is no known case of *Salmonella* being introduced by human carriers. Mallman, Ryff, and Matthews[39] have reviewed the literature of the large variety of types of *Salmonella* which have been found to occur in the common fowl. They themselves isolated 11 different species of *Salmonella* from the intestinal content or feces of chickens. In spite of the large amount of work

undertaken, the source of *Salmonella* in dried egg powder apparently remains unknown. Recent studies by Gibbons and Moore [36] gave considerable evidence that eggs were the source of the organism.

Gibbons, Moore, and Fulton [40] have investigated the growth of the *Salmonella* group and of *Staphylococcus aureus* and four strains of *Streptococcus pyogenes* in liquid and reconstituted eggs. Group A streptococci did not grow in liquid egg and the investigators point out that this is probably one explanation why they are not usually found in egg powder. *Salmonella* organisms and *Staphylococcus aureus* grew under proper temperature conditions and incubation periods, but in commercial practice the danger would be remote under adequate bacteriological supervision.

If reconstituted eggs are allowed to stand overnight there would be danger of multiplication. Work by Haines and Elliot [5] indicates that for this reason the reconstitution period should not exceed 4 hours.

The British Ministry of Food has suspected that dried eggs might be responsible for *Salmonella* food poisoning in Britain.[30] Every epidemiologist is aware of the difficulties connected with obtaining conclusive evidence of the source in cases of food poisoning, and no convincing evidence has been presented to justify the suspicion that dried whole egg powder might be responsible for *Solmonella* food poisoning. In this connection, Gibbons and Moore [32] state that eggs have not been incriminated in *Salmonella* poisoning. However, on June 11, 1945, the British Ministry of Food issued an order [41] to control the use of dried eggs in specified manufactured foods with the object of avoiding potential cases of food poisoning.

In general, bacterial flora in dried egg powder decrease during storage if the humidity is not excessive. Tracy, et al.[43] and Hartsell [27] have shown that the bacteria count of the powder decreases as temperature and storage time increase. For instance, Tracy and his coworkers found that dried egg powder stored at −20.5° C. (−5° F.) had a higher count per gram than that stored at 32.3° C. (90° F.), even after a period of 1½ years. Gibbons and Fulton [31] showed that dried egg powder stored at 55° C. (131° F.) was practically sterile in 4 weeks. In this connection, it is interesting to note that Stuart, et al.[44] found that at a temperature of 30° C. (86° F.) and below, bacterial death in dried whole egg powder of sanitary quality proceeded at a uniform logarithmic rate normal for bacterial population of material stored in a dry condition.

As for the death of specific organisms during storage of dried egg powder, Stuart, Hall, and Dicks [33] state that organisms of the coliform group remain viable during storage. Gibbons and Moore [36] showed that Salmonella organisms surviving dehydration operations die off during storage even at low temperatures. Haines and Elliot [5] reported that a coagulase-positive strain of *S. aureus* died out slowly at room temperature in whole egg powder.

Bacterial population is related to the moisture content of the dry egg powder. Haines and Elliott [5] state that bacterial growth is unlikely in egg powder containing less than 15 per cent moisture, and mold growth below about 10 per cent moisture content. Gibbons and Fulton,[31] on the other hand, found that at 5 per cent moisture levels there was an increase in molds. Stuart, Hall, and Dicks [33] reported that when the moisture content is 5 per cent or less, bacterial death appeared to be greater as the moisture content was reduced.

The temperature at which eggs are dried is an important factor in determining the quality of the product;

the lower the drying temperature, the better the physical qualities, but the greater the survival of bacteria. Thus, Gibbons and Fulton [31] have shown that a decrease of from 4° to 15° C. (39°–59° F.) in the temperature of the exhaust air from a spray dryer is accompanied by a 3 to 5 fold increase in the number of bacteria in the resulting powder.

Rapid cooling of the product after drying is desirable from the standpoint of physical quality. Johns [30] and Gibbons and Fulton [31] have pointed out, however, that such a technique means a higher bacterial count.

In some instances where liquid egg is pasteurized by passing through a preheater before spray drying, significant increases in bacterial population have resulted. Johns [30] investigated this and found that in such cases material had adhered to the walls of the preheater tubes, setting up a nucleus of infection. At temperatures less than 57.2° C. (135° F.) in preheaters multiplication of organisms will take place and for that reason pasteurizing temperatures of 60°–62.8° C. (140°–145° F.) are used. Tube heaters cannot operate at these temperatures and are not used in the United States.

*Nutritional aspects* — Bate-Smith [45] found that there was little loss of vitamin A by spray drying, but that there was a loss when eggs were tray dried. Hauge and Zscheile,[46] Hauge, Zscheile, Carrick, and Bohren,[47] Klose, Jones, and Fevold,[48] and Cruickshank, Kodicek, and Wang [49] obtained similar results with spray-dried egg powder. Bate-Smith, and Klose, et al. found that spray drying caused no loss of thiamine. The results of the work of Klose and his coworkers indicated that riboflavin, pantothenic acid, and niacin suffered no loss by spray drying.

Storage of dried egg powder brings about a loss of vitamins. Hauge, et al. found that the greatest losses of vitamin A occurred in powder held at room temperature, such losses amounting to 40 per cent in 12 months. Warehouse storage caused a loss of 30 per cent. Klose, et al. reported greater losses at comparable temperatures. Low storage temperatures increase vitamin A retention. Cruickshank, et al.[49] found no loss of either vitamin A or D during storage in a nitrogen pack at 15° C. (59° F.) for 5 months.

Klose, at al. have found pantothenic acid and niacin to be quite stable during 9 months' storage. There was a slight destruction of riboflavin at storage temperature of 37° C. (98.6° F.) but essentially none at lower temperatures. Thiamine was found to be stable at storage temperatures of —9.4° C. (15° F.), but half of the potency was lost when the material was stored at 37° C. (98.6° F.) for 9 months. Cruickshank, et al. have shown that it is storage temperatures rather than high moisture content of the powder which detrimentally affects the retention of thiamine. There is an apparent inhibition of losses of vitamin A after 3 months' storage, for the rate of loss in Klose's work was greatest during the first 3 months, after which vitamin A seemed rather stable.

There is a paucity of data regarding the nutritive value of reconstituted egg powder. Herraiz and Herrero [50] report reconstituted dried eggs to be a good source of vitamin A, thiamine, riboflavin, and niacin.

### DEHYDRATED FISH

Dehydrated fish should not be confused with salted, dried, or smoked fish. The former is prepared by steaming and grinding the fish and removing moisture under controlled conditions of humidity and temperature. During dehydration the fish may or may not be smoked. So far as known, fish is not at present being commercially dehydrated in the United States. In 1944

a plant was erected on the west coast of southern Florida for dehydrating mullet, but never got into commercial production. Some experimental work has been undertaken in the United States relative to fish dehydration,[51] but most of the research has been carried out at the Torry Research Station in Aberdeen,[52, 53] and by the Fisheries Research Board of Canada. Nearly all the work of the latter agency remains unpublished.

*Microbiological aspects*—Unpublished data by Shewan [54] indicate that pathogens of the food poisoning type are not usually present as a part of the normal flora of fish. During handling aboard ship the flora will be subject to change, but Shewan believes it unlikely that pathogenic cocci will be present in other than small numbers at this stage, since low temperatures brought about by icing are unsuitable for their growth. During subsequent handling for dehydration, the flora will again change, and may consist predominantly of cocci, of which from 15 to 30 per cent may be coagulase-positive *S. aureus*. From the standpoint of public health, therefore, it is important that the fish be thoroughly cooked prior to dehydration and that dehydration be carried out rapidly and at sufficiently high temperatures to prevent bacterial contamination or growth. The Torry Research Station at Aberdeen has pointed out that the standard hygiene in the dehydration of fish should be more like that of a modern dairy than that of the salt fish curing yard or fish meal factory; and that all steps in the processing should be carried out under competent bacteriological supervision.

According to Tarr,[55] unless dehydrated fish (containing 40 per cent fat) is stored at humidities less than 75 per cent (at temperatures of between 68° and 99° F.), mold will develop. Mold growth is unlikely unless the relative humidity is 80 per cent or more, which corresponds to a moisture content of 17.5 per cent. At this moisture level, mold growth will be slow and limited. At 85 per cent relative humidity (corresponding to a moisture content of 19.5 per cent), bacteria will increase.

There are no bacterial standards in the United States for dehydrated fish. A Lend-Lease contract in 1944 specified a plate count of not more than 10,000 bacteria per gm. On the basis of research at Torry,[56] it was believed that, so far as dehydrated cod and haddock were concerned, a good product should not have more than 10,000 organisms per gm.

*Nutritional aspects*—Few published data are available relative to the vitamin content of dehydrated fish. Stansby [57] carried out feeding tests with rats on dehydrated cod, mullet, whiting, and carp and found that the dehydration process caused a loss of about 50 per cent of the thiamine and 65 per cent of the riboflavin. This loss took place largely in the cooking process and about half of each vitamin lost could be recovered in the "stick."

Martinek and Jacobs [58] have investigated the apparent digestibility of protein from dehydrated fish when fed to rats at a level of 9 per cent by weight in the basal diet. All the dehydrated fish investigated (cod, mullet, whiting, and carp) had an apparent digestibility of about 87 per cent. Stansby [57] also found that the dehydration process did not adversely affect either the nutritive value or the digestibility of the fish.

### DEHYDRATED MEAT

The dehydration of beef and pork in the United States has been primarily a war measure. Accurate production figures are impossible to obtain, but purchases by the government reflect approximate production because dehydrated meat is not available for civilian use. From October to Decem-

ber, 1942, dehydrated pork purchases amounted to 1,264,720 lbs.; 1943, 16,450,536 lbs.; and in 1944, 11,992,409 lbs. No figures are available for dehydrated beef.

*Microbiological aspects*—There are no bacteriological standards in the United States for dehydrated meat. Specifications do, however, require a standard precooking treatment of "a minimum of 30 minutes at not less than 165° F. internal temperature."[59] The provisional bacteriological standard adopted by the Ministry of Food Advisory Bacteriological Committee states[56] "Conditions of manufacture shall be such that bacterial toxins are not formed. The dried product shall not contain organisms likely to be pathogenic to men by mouth, and shall have a bacterial content, as estimated by a 48 hour plate count at 37° C. on nutrient agar, not exceeding 10,000 per g." These specifications are in effect for all dehydrated meat now obtained by the British. The workability from a routine control standpoint of the provisions that the product "shall not contain organisms likely to be pathogenic to men" will undoubtedly be questioned by many American bacteriologists. Nevertheless, English workers are examining the meat for pathogens as a routine procedure.

According to researches by Haines and Elliott,[5] raw meat may carry a flora consisting of *Achromobacter*, cocci, coliform and *Proteus* organisms, and aerobic spore formers. These organisms will be destroyed by adequate steaming of the ground meat prior to dehydration. During subsequent traying and dehydration, the bacterial count will again increase. Hankins, et al.[59] found that bacterial spores, although few in numbers, were the predominating microörganisms found in the dehydrated product. Gas-forming bacteria whose optimum growth was 37° C. (98.6° F.), and putrefactive anaerobic bacteria were also found. Haines and Elliott could not find pathogenic organisms or *S. aureus* in their dried product. Their investigations in this respect were, however, limited.

It is quite likely that danger from food poisoning bacteria in dehydrated meat is controlled chiefly by the moisture content of the product, and so long as the moisture content remains at 10 per cent or below in any part of the product, the problem of bacterial food poisoning is probably nil. If dehydrated meat has a moisture content of less than about 15 per cent (calculated on a fat-free basis) microörganisms cannot develop.[60] Hankins, et al. found that food poisoning strains of *Staphylococcus* and *Streptococcus* failed to grow in the meat if the moisture content did not exceed 20 to 30 per cent. *Salmonella* did not grow in meat containing 50 per cent or less of moisture. *Clostridium botulinum* toxin formation occurred only in meat containing 30 per cent or more moisture. Some evidence was obtained that an increase in storage time and temperature had a tendency to increase the potency of the toxin developed later from surviving spores if they had the opportunity to function.

The above data imply that in the rehydration of meat there is apparent danger of food poisoning, if such rehydration is prolonged. It has been found that toxin formation from *Cl. botulinum* will take place in from 8 to 10 hours in reconstituted meat if spores are present in the dehydrated product.[59] Bate-Smith[60] states that the reconstituted meat should not be allowed to stand for more than an hour or two before being cooked.

In general, there is a decrease in the population of bacteria during storage. Experiments by Haines and Elliot suggest that the death rate of a coagulase-positive strain of *S. aureus* was slower in nitrogen than in air, and more rapid

at 37° C. (98.6° F.) than at 15° C. (59° F.). In this particular instance no significant difference was found between the rate of death at 2.0 and 4.5 per cent water content in air at 15° C. (59° F.). Hankins, et al. found that mold growth seldom took place on dehydrated meat containing less than 15 per cent moisture and that mold grew only with difficulty on fat meat.

*Nutritional aspects*—Hankins, et al. showed that during storage of dehydrated meat, particularly at high temperatures, there is an apparent breakdown of the proteins accompanied by a change in color and flavor. Such changes decrease the palatability. These workers also found the digestive coefficient of dehydrated pork to be 92 per cent, of dehydrated beef 88.7 per cent, and of dehydrated mutton 90.9 per cent, as compared to 80.3 per cent for dried skim milk and 89.4 per cent for dried eggs. Rice and Robinson [61] report that the protein quality is not significantly reduced during dehydration.

Poling, Schultz, and Robinson [62] state that the biologic value of the proteins of dehydrated beef and pork was not significantly below that of the raw commodity when fed at 18 per cent protein levels.

Hankins, et al. found relatively small losses of riboflavin and niacin during dehydration, but losses of thiamine amounted to about 50 per cent. Poling, et al., on the other hand, found a retention of thiamine and pantothenic acid ranging from 76 to 63 per cent, while retention of riboflavin amounted to 90 per cent. These results were confirmed by Rice and Robinson [63] who report a 76 per cent retention of thiamine, a 92 per cent retention of niacin, and 68 per cent retention of pantothenic acid in dehydrated beef. Pork retained 63 per cent thiamine, 92 per cent niacin, and 73 per cent pantothenic acid during dehydration. There was no loss of riboflavin in dehydrating either beef or pork.

During storage, loss of thiamine is quite rapid. Rice, Beuk, and Robinson [64] found that only 15 per cent was retained after storage for one week at 48.9° C. (120° F.). Hankins, et al. have reported complete destruction in 8 weeks at 43.4° C. (110° F.). Losses are less at lower temperatures. This confirms the findings of Rice and Robinson [61] who reported a 29 per cent retention of thiamine in pork stored at 26.7° C. (80° F.) for 219 days, but complete destruction at higher temperatures. Rice, et al.[65] found that the loss of thiamine in dehydrated pork was roughly proportional to the moisture content between 0 and 6 per cent moisture levels. There was a rapid loss at storage temperatures above 37° C. (98.6° F.). At 3° C. (37.4° F.), the loss was about 4 per cent.

There appear to be insignificant losses of niacin after 9 months' storage even at elevated temperatures.[59] Rice and Robinson [61] report little or no loss of niacin, riboflavin, or pantothenic acid in dehydrated pork or beef stored for 219 days at 37.2° C. (99° F.). Above storage temperatures of 48.9° C. (120° F.) there was a slow loss of riboflavin and pantothenic acid.

Although the packing of certain dehydrated vegetables in an inert gas aids in retention of certain vitamins, this does not seem to be the case with dehydrated meats. Rice, et al., for instance, found that vacuum-nitrogen or carbon dioxide packing did not increase thiamine retention during storage.

So far as can be determined from published reports and private communications, there have been no cases of food poisoning arising from the consumption of dehydrated foods. Nevertheless, *Salmonella* and *Staphylococci* have been found in certain types of dehydrated foods, and it is believed that foods containing such organisms

should be considered potential vectors of food poisoning.

It is recommended that the committee consider the advisability of establishing bacterial standards for dehydrated foods, particularly for dried egg powder. If it is desired to establish such standards, it will be necessary to determine whether a plate count or total miscroscopic count, along with an examination for the absence of groups of organisms likely to be pathogenic, would be advisable in all classes of dehydrated foods under consideration. It is believed that the most effective procedure for determining the advisability and necessity of establishing standards would be by means of a symposium at the Annual Meeting of the Association.

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HARRY W. VON LOESECKE, *Chairman*,
U. S. Department of Agriculture,
Washington, D. C.
FRANK L. GUNDERSON, PH.D.
GEORGE J. HUCKER, PH.D.
D. BREESE JONES, PH.D.
H. D. KRUSE, M.D.
ROE E. REMINGTON, PH.D.
R. C. SHERWOOD, PH.D.

# Teamwork for Industrial Health*

J. J. BLOOMFIELD, F.A.P.H.A.

*Senior Sanitary Engineer, Industrial Hygiene Division, Bureau of State Services, U. S. Public Health Service, Bethesda, Md.*

LIKE most thoughtful citizens, I am sure that you have been thinking a good deal of the atomic bomb. Even though we may not fully understand the significance of our progress in the new science of atomic energy, we do know that we stand on the threshold of a brand new civilization. Once we accept this idea we can begin to act constructively. We can begin to plan.

Now you will probably ask yourself just what the atomic bomb has to do with industrial health. I am sure that you will agree that whatever affects society as a whole affects industrial health, especially in a highly industrialized country such as ours. The atomic bomb was made possible only through united action. Indeed, the "secret" of the atomic bomb was the coördination of all resources—scientific, industrial, and governmental. This is really the great lesson of the war in relation to industrial and community health. Science produces "miracles" *only* when it is applied. The medical and health sciences have never yet been applied in the intense and coördinated way that produced the atomic bomb. We really do not know as yet what "miracles" of health our scientific knowledge could produce if we applied it universally.

Even when used in a meager way, the health sciences produce remarkable results in increased efficiency of the human machine, in more harmonious relationships, especially between labor and management, and in a greater capacity for earning, as well as in the saving of life and the promotion of health. Let me give you just one example of what the application of our present scientific knowledge can accomplish in the field of industrial health alone.

Early in 1941, at the beginning of our defense program, the War Department placed the joint responsibility for the organization and maintenance of industrial health services in the large government-owned munitions plants upon the Army Medical Corps and the Industrial Hygiene Division of the U. S. Public Health Service. Since many of the plants were at that time still in the process of construction, it was possible to begin planning for a good industrial health program at the blueprint stage. The health program in the munitions plants was carried out for the entire duration of the war. Through frequent inspections, our professional staff saw to it that safe and healthful working conditions were maintained and that the workers obtained the benefits of the best practices in the field of personal hygiene. As a result, outstanding success was achieved in the reduction of health and accident hazards in this vital industry. Disability and death rates from exposure to toxic explosives and related chemicals have been gratifyingly low. [See note on page 268.]

## ELEMENTS OF AN INDUSTRIAL HEALTH PROGRAM

We have known for some time that if

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we are to maintain and improve the physical and mental well-being of our workers we must not only be concerned with the working environment but also with conditions outside the workplace. We know that efforts to insure a safe and healthful working environment may often be nullified by unfavorable conditions in the community. That was brought forcefully to our attention in many dramatic incidents during this war. Let me give you just one instance which will illustrate my point.

At the very height of the war, I happened to be on the West Coast visiting the health department of a state which was active in the production of all types of fighting ships. At the time of my visit, there was an outbreak of dysentery in a small shipyard employing 8,000 workers. About 10 per cent of the working force, or 800 persons, were affected. Those workers not sick were on the point of walking out on strike unless something was done to control the situation. The source of the trouble was easily found. The old septic tank, designed to serve about 500 people, had overflowed and was discharging the sewage from 8,000 people into a lake, on the shores of which the yard was situated. Through some mishap, probably a cross-connection, polluted lake water was siphoned back into the shipyard drinking water—results, 800 sick workers, some of them in the hospital. Failure of the community to provide adequate sewage disposal facilities was the true cause of the outbreak.

I think this one example clearly illustrates that the health of industrial workers is a matter of concern not only to industry but to the community at large. In dealing with the worker, therefore, we must adopt a concept of "the total man," if we are to keep him on the job and enable him to contribute to the life of the community his utmost in healthful living and intelligent citizenship.

If we accept this concept concerning the industrial worker, then we must provide at least the elements of a good industrial health program. Broadly, the program aims to achieve and maintain three goals: (1) a safe and healthful working environment; (2) a healthful community environment; and (3) healthy, well adjusted men and women engaged in industrial production. To accomplish these purposes, four types of services are needed.

First, the provision of a safe and healthful working environment. This involves study of actual and potential hazards to determine the danger from poisonous dusts, gases, and fumes. Processes and materials may have to be changed to safeguard workers, or special equipment provided. Sanitation in the plant is equally necessary.

Second, the provision by industry of medical and nursing services and a properly equipped dispensary. First aid treatment of illnesses and accidents was the original function of industrial medical departments—a service made necessary by state workmen's compensation laws. These services in the larger industries now have been expanded to include preplacement examinations for applicants. The importance of this examination is increasing, because the placement of large numbers of handicapped persons requires that the worker be carefully fitted to his job. The medical departments in large industries have further broadened their scope to provide a continuous preventive program including periodic health examinations, which vary in frequency and type according to the requirements of the job. In small plants, where a full-time medical service is not feasible, part-time services may be obtained from private practitioners of medicine, and an industrial nurse may be employed full time. To supplement the medical service, large industries are also employing dentists to give emergency

treatment and regular dental examinations. In the majority of industrial medical services, patients are referred to private physicians and dentists for complete treatment when the illness is not related to the job. A health education program organized coöperatively by the medical and personnel departments in coöperation with the employees is another feature of a complete plant program.

Third, the provision of feeding facilities for workers on all shifts, assuring them of adequate, inexpensive meals.

A fourth essential may be called welfare services. These include mutual benefit plans, Blue Cross hospital insurance plans, and other methods for the purchase of medical service by workers and their families. Counseling services to help individuals solve their personal problems, organization for recreation, and other activities that contribute to morale and healthful living may be included.

Your state industrial hygiene service is specifically designed to help reduce industrial disability resulting from conditions of employment. As you all know, however, the major share of industrial disability, nearly 90 per cent of the total, is due to common ailments, such as colds, digestive diseases, and certain chronic disorders which do not necessarily originate from employment. These problems must be attacked where people work as well as where they live. Only by intensive effort on the part of all public health agencies, the medical profession, industry, and labor, shall we reduce the waste of life, money, and productivity. Small industries are especially in need of such coördinated effort, for they are unable to provide these basic services by themselves.

## AVAILABLE RESOURCES FOR INDUSTRIAL HEALTH

Accomplishing the objectives of the program I have just outlined, calls for teamwork. All available resources must be put to work. It is just plain common sense that no one organization is ever going to obtain optimum health and safety single handed. The complexity of services, equipment, facilities, and personnel needed to translate a blueprint into healthier men and women proves the point. The use of available resources obviously requires close cooperation. Let us see what some of these available resources are.

To begin with, we have scientific research in the health and medical fields, which is a continuous source of new knowledge for the promotion of health and the prevention and cure of disease. The Public Health Service has been conducting such research for more than three decades, and it is safe to say that in so far as occupational diseases are concerned, we now have the knowledge which, if properly applied, would control or prevent all of them. This vast store of information on industrial health hazards has been obtained with the coöperation of industry and labor, in the conduct of our numerous field and laboratory studies.

Next, we have the federal, state, and local industrial hygiene services throughout the nation. Today there are approximately 50 such services functioning in 39 states, in Hawaii, and in the Tennessee Valley Authority. These units employ nearly 400 specialists and expend approximately 1½ million dollars annually. Although most of the state and local units are new—many of them having been created during the past 10 years—they already have made a remarkable record in the prevention and control of industrial disabilities.

Next we have the private practitioners of medicine, acting individually, or collectively through their county and state medical societies. The Council on Industrial Health of the American Medical Association has promoted the organization of committees on industrial health

among the various county and state medical societies. These committees actively develop a better understanding of industrial hygiene problems among all physicians, and especially enlist their interest in giving part-time service to small industries. In several communities, the county medical society committee on industrial health has taken the leadership in coöperative programs —programs with trade associations, labor unions, and other community agencies for the development of health services in local industries. I shall tell you something more about this work later.

In order to obtain many of the general health services in your community, you have, of course, your local health department. There are also the public welfare agencies, and voluntary agencies such as the Red Cross, the social hygiene societies, the local tuberculosis association, and so on. Then, too, there are various types of mutual sick benefit plans, Blue Cross hospital insurance plans, and other methods for the purchase of medical service by workers and their families. There are organizations for recreation and certain community hospital facilities. These and many other agencies, which I need not mention, are at your beck and call and need only to be brought together in an integrated plan to render important services related to health.

I can think of no community better prepared than your own in which to try out such a plan. Coördinated effort is practical, and pays dividends. If the plan has the coöperation of all those involved, it will be sure to have permanency. Such programs are even today functioning in a few of our communities. However, these are the exception rather than the rule. The rule in most of our towns and cities is for each organization to go its own way, often ignoring the wealth of scientific information which is waiting to be tapped. There are a number of reasons why we permit this gap between our knowledge and its application to our daily lives. One of the reasons has to do with certain deficiencies or needs in health work.

### MAJOR DEFICIENCIES IN INDUSTRIAL HEALTH

I should like to mention briefly some of the major health needs which exist to some extent in all parts of the country. To begin with, we have nowhere nearly the number of trained personnel we require for public health work; that is, physicians, engineers, nurses, dentists, chemists, health educators, and other professional workers. Many communities today do not have enough medical man power and facilities to meet current demands; for that matter they never have had enough. The same is true in regard to some of the other professional health workers.

Another major deficiency is in the provision of hospitals and health centers, including facilities for the treatment of such long-term illnesses as tuberculosis and mental disease. Surveys made by the Public Health Service show that the construction of small, well equipped hospitals and health centers to serve rural communities is a particularly urgent need. However, it is especially important that all the hospitals of a state be fitted into one overall plan, in order that the highest type of complete service may be rendered to the people of the area.

There is also a major deficiency in our sanitary facilities, such as public water supplies, sewerage systems, and the like. Estimates show that there are over 10,000 American communities which need to improve their water supplies and sewerage systems, and 5 million rural families in need of better sanitary facilities. There are still many counties, nearly 1,200, without basic public health services, while many of

the remaining 1,800 are operating with greatly depleted staffs.

There is a need for more research not only in industrial hazards but also in diseases of major concern to industrial workers—respiratory infections, heart disease, and cancer—all of which are taking the heaviest tolls in ill health and premature deaths.

We have much to accomplish in connection with industrial health hazards, especially in these days of reconversion. We shall have on our hands the labor force drastically changed by the war. In other words, we have more women in industry, more older workers, and more young workers, to say nothing of veterans with service-connected disabilities and other persons in need of rehabilitation. The problems of conversion in 1940 are with us again in this reconversion period of 1945–1946. Management is doing its utmost to reconvert to consumer production as rapidly as possible. Again, as in 1940, time is precious. Some of the problems already brought about by reconversion are due to the technologic improvements effected in industry by the war itself. For example, the use of light metals, such as aluminum and magnesium, has brought in its wake a serious exposure to fluorides. The growth in the fluorescent lighting industry is associated with exposure to certain compounds and operations which have already caused several deaths and many serious cases of poisoning. The same is true of the greatly expanded plastics industry, which will grow to even greater proportions in the next few years. This is also true of the synthetic rubber industry.

The war gave an opportunity to demonstrate successfully the practical use of industrial x-rays for the detection of flaws in finished products. Some x-ray installations are already using voltages as high as 2 million. It is imperative that these installations be so designed, operated, and maintained that stray x-rays will not injure workers in the vicinity of the testing machine. The introduction of many new chemicals has resulted in a greater increase in occupational skin diseases and in systemic poisoning.

Perhaps one of the most important problems before us today is that of insuring complete health and medical services to all the people. Much has been said regarding a national medical care program and much more will be said. I am wondering if most people, however, are aware of the need for a broader plan to insure maximum health services. Along with provisions for the purchase of medical care, we must consider the needs for hospitals, diagnostic clinics, and health centers, and must increase the amount and scope of public health services in order to carry out the important task of preventing sickness and unnecessary death. We must make sure that every family in the country has safe water and adequate sanitary facilities. To accomplish these purposes, we must have more trained professional personnel, more scientific research in health and medical fields.

It is not within the province of the present discussion to indicate just how this can be done. Our country has had enough experience in coöperation among federal, state, and local governments, the professions and private agencies, to indicate that the means to provide a comprehensive national health program can be found and will be found. Moreover, the program can be developed in accordance with the needs, resources, and viewpoint of the several states. In fact, a number of states have created commissions to plan for post-war health facilities and services. It should be remembered that the initiative must come from the individual communities and states, themselves.

I have mentioned the problems of small plants. I said that small indus-

tries which are unable to provide the basic services for themselves are more dependent on community health agencies than the larger plants. We should be particularly concerned with their problems, which have been with us always, like the proverbial poor. This brings us to the question of how we should organize for better industrial health in a community.

### ORGANIZING FOR INDUSTRIAL HEALTH

The war has taught us that the physical and mental well-being of all our people is our greatest asset. Health is wealth—but wealth is not necessarily health. Industry reaches out into practically every home through its employment of labor, so that the health of industrial employees is also a community problem, requiring well organized community action. This is especially true at the present time when we are on the threshold of a new era—the era of human engineering or "humanics." We have just passed from the strictly machine engineering age, in which attention was given primarily to the improvement of machinery and processes, to a human engineering era, in which we are concerned with the improvement of the human organism, physically and mentally. This transition is strikingly represented today by the various plans of reconversion, in which consideration is being given to the reconversion of men, as well as machines. An example is the establishment of community rehabilitation for returning veterans.

Now, health is everybody's business; people are "employees" and "employers" only part of the day. The remainder of the time they are plain everyday citizens, just like you and me. Their influence on community action is tremendous and should be used to bring about the provision of community services essential to the maintenance of health. Hence, in any community planning for health, all groups should be represented. This planning moreover should be for total community health and not for in-plant health services, alone.

Neither I nor any "expert" can give a blueprint of how you should organize for industrial health, nor should I wish to do so even if I had such a blueprint. To be effective and workable, a plan has to be developed by the citizens of the community itself. However, I may be able to leave with you a few guiding principles which have been useful to others in community organization for industrial health.

To begin with, there is a need for a unified approach. An industrial health program needs a grass roots basis. Success can be best accomplished with the help *of* people and not *for* them. The second essential is to survey the needs of the community, in other words, to define your problems. Perhaps this may best be accomplished with the aid of your state industrial hygiene service, which has qualified professional personnel to conduct a community-wide study of the various industries in your area, the health hazards of the working environment, and the present facilities within the plants for coping with the various problems revealed.

Defining a problem is only half the battle. You will next need to make an inventory of the various resources which I have described as essential for community action. This can probably be done through a committee of citizens on which will be represented management, labor, your state and local health department, and other community organizations, both official and nonofficial. And, finally, you will want to plan a program to meet the needs, including the means to implement such a program. Let me give you an example of what was accomplished in just one community with regard to industrial health.

In one community, a local trade association, together with the county medical society, launched a campaign for the establishment of an industrial health service which would keep the plants in the area producing at the peak, and maintain the general welfare of the workers on a high level. An industrial health committee was appointed, including on its membership representatives of the various organizations I have just mentioned. As a first step the state industrial hygiene division made an inventory of the physical environment and existing health services of the industries in the community. It was found that most of the plants were small in size and that very few of them had adequate provisions for medical services. In addition, many of them had occupational health hazards in need of correction. Of the 97 plants in this area, only 3 provided cafeteria services for their employees. The survey clearly indicated the need for organized industrial health services in the local industries and provided suggestions for the development of such services. At about the same time, the medical school of the state university offered a postgraduate course in industrial medicine and hygiene for physicians and nurses of the area. The industrial health committee, sponsored by the local chamber of commerce, held a series of meetings to lay the foundation for this coöperative venture. At these meetings members of the health committee presented detailed facts on the costs of the services and other pertinent data. Later a two man team visited the plants to make specific recommendations. Emphasis was placed on what could be accomplished by a good program in those plants which showed high disability rates. Employers were encouraged to introduce the various elements of a sound industrial health program which I have mentioned earlier. Since most of the plants were small, each received the part-time services of a physician and a nurse, usually paid for on an hourly basis. The amount of time devoted to each plant depended on the population of the plant.

As a result of this program 11 of the larger companies employing approximately 9,000 people now have integrated medical or health units in special departments to give reasonably complete service. Two years ago, only 3 of these plants had such services. Sixty-one of the industries employing about 12,000 workers have some degree of medical service. At least 5 in every 7 plant employees have group health insurance, ranging from partial to complete coverage. The health insurance covers medical, surgical, and hospitalization costs. At least 4 in every 5 employees have had a chest x-ray examination for tuberculosis. The tuberculosis program was extended to include all the children in the area who were over 14 years old. Most of the workers in this community together with their families have been impressed with the real importance of proper nutrition. As a result of the overall program, absenteeism has materially decreased in those plants having health units.

There are other such plans throughout the country which, although not alike in every detail, have certain common denominators. They recognize the tangible benefits to employer and employee through increased production and larger incomes. All have had the support of the local trade association. Today some 250 chambers of commerce have active health committees. These committees are working closely with the local medical societies. All the plans have been developed with the understanding and support of the public. Each one has found the plant survey, as conducted by trained industrial hygienists, an important factor in defining the problems and in pointing

the way for their solution. All of them have included personal contact with management and labor and have emphasized the value of health services for employees of small plants.

SUMMARY

We have demonstrated in our recent war effort that the people of this nation are capable of moving mountains through teamwork and coördinated effort. Furthermore, all of this has been achieved through democratic processes. We have learned that in dealing with the worker we must adopt the concept of "the total man," if we are to bring to him the benefits of modern medicine and hygiene. This, we have seen, requires that we provide for the worker a safe and healthful environment in his place of employment, adequate medical and nursing services in a properly equipped dispensary, such services to include replacement and periodic health examinations, and general health education. The provisions of feeding facilities in the plant and of essential welfare services are also requisites of a good program. Assistance in developing these fundamental services is available in our communities through the many resources which have been developed during the past ten years. What is needed to harness all this potential power is a coördinated program in which all of the people, not only employers and employees, will take an active part.

This may seem a gigantic task, but the war has proved that this country can do the impossible. We have the brains, the man power, and the natural resources to do it. We have come out of this war the greatest military and industrial nation in the world. Surely in the peaceful years, we shall use fully our potential strength to create the healthiest nation in the world.

NOTE: For example, in the fiscal year 1945, there were only 3 deaths from TNT poisoning among approximately 100,000 employees engaged in TNT operations. The most hazardous TNT exposures were reduced to safe limits through the use of modern engineering practice. In World War I, the facilities of this country produced 40 per cent of the military explosives used by the Allies; in those plants, there occurred 230 deaths for every billion pounds of explosives manufactured. In the present war, United States facilities produced 95 per cent of all military explosives used by the Allies; only 5 deaths for each billion pounds of explosives occurred. These figures speak eloquently for the application of industrial hygiene.

# State Participation in the Evaluation of Local Health Services

L. P. WALTER, M.D., M.P.H.

*Director, Local Health Services, Texas State Department of Health, Austin, Tex.*

THE Texas State Department of Health has adopted the Evaluation Program of the American Public Health Association as a device for improving the quality and quantity of public health work throughout the entire state. Promotion of the *Evaluation Schedule* on a state-wide basis was undertaken only after its value had been definitely proved in a few communities.

Throughout the years, some Texas communities had periodically prepared *Evaluation Schedules* and submitted them for grading during the regime of the Health Conservation Contest and the National Health Honor Roll. Three years ago, when the Association changed the emphasis of the Program by encouraging participation of local units only with and through state health departments, 8 Texas communities submitted schedules and were included in *Health Practice Indices 1941–1942*, 18 communities were reported in the 1943 issue, and 34 in the 1943–1944 edition.

The extent to which a state should participate in the evaluation of local health services may depend on the degree of responsibility for administration of the program in the local areas. There is wide variation in public health administration throughout the United States. In some areas, local officials assume most of the responsibility for financing and operating the full-time health services; in other areas, the state department of health assumes most of the responsibility for their operation. Between these two extremes there are many differences.

In Texas, the State Department of Health has assumed the leadership in the promotion of full-time local health services. The territory of the State of Texas covers about one-eleventh of the United States, and this vast area is divided into 254 counties, 60 of which are served by full-time local health service. A wide experience over a long period of time proved that unless the State Department of Health stimulated some of the local communities to the realization of the need for better public health service, practically no progress would be made. Responsibility for administration of the public health program in most Texas communities is divided between the local appropriating agencies and the State Department of Health. Since the funds appropriated by the Texas Legislature are inadequate for expansion of the program, much needed grants-in-aid are accepted from the federal government. These funds are allocated to local communities in accordance with the rules and regulations formulated by the federal government.

The 60 counties in Texas receiving full-time local health services are covered by 47 health units. In each of these health units, at the present time, at least 50 per cent of the funds for operating expenses must come from the local appropriating agencies. In many units the ratio of local funds is much

greater than 50 per cent. However, no health unit receives over $50,000 per year from the State Department of Health. It is, therefore, not only the responsibility of the local appropriating agencies, but also the responsibility of the Texas State Department to evaluate periodically the public health services that are rendered.

When a modern health unit is established with full-time qualified personnel, financed largely from local funds, there is usually more local interest in the efficiency and economy of its operation. Even in such areas, where the public health program is primarily the responsibility of the local communities, the state health department can at times render valuable consultative assistance in program planning and in meeting emergencies. In order to render a service which will be respected by the local communities, a state department of health should have proper equipment and be manned by highly trained personnel.

It is impossible to render adequate services unless the state department of health is informed at all times relative to the public health needs through the state. These needs cannot be known accurately except by means of a periodic evaluation. An occasional visit to a community will not produce the needed information. Random reports received from interested citizens may conflict. Complaints sent to the state department by local officials may be biased because of political influence. Newspaper reports concerning local public health affairs are frequently inaccurate. When facts concerning local public health conditions are obtained in an irregular haphazard manner there is no basis for comparing the health program of one county with that of another. A comparison which is statistically sound is desirable when recommendations are made for allocation of funds, placement of specialized personnel, and in many other activities from the state level. An annual evaluation will show the need for economy in the use of all funds appropriated for public health. There may be four or five governmental jurisdictions within a county asking for state financial assistance in setting up a full-time health service. If *Evaluation Schedules* are prepared, duplication of services is made obvious.

The American Public Health Association, in coöperation with the Texas State Department of Health, has prepared "blue-prints" for a minimum public health program in Texas.* This program calls for establishment of 80 health units. These units, in many instances, are made up of several counties and, unless the State Department of Health has some tangible documentary evidence to show the need for multi-county units, difficulty may be experienced in answering the questions which arise in the organization of such units.

By studying the *Evaluation Schedules* and *Health Practice Indices*, the State Department is able to view the public health picture as a whole. The *Indices* serve as a guide for demonstrating to newly recruited health officers the needs and activitjes of particular areas, and are an aid in fitting the physician's special aptitudes to community needs.

The first *Evaluation Schedules* which were prepared by most communities in Texas were not completely executed because the health unit and other agencies did not have their records established in such a manner that the information could be obtained. Marked improvement was shown in succeeding schedules, which may be attributed in part to the inauguration of a standardized record system through the state, and to assistance given the local units by two technical field clerks who have

* Emerson, Haven. *Local Health Units for the Nation*. New York: Commonwealth Fund, 1945.

been given special training in the preparation of the *Evaluation Schedule*. Many requests are made by the local communities for the services of the technical field clerks, and by careful arrangement of itineraries the department is able to supply this assistance.

In Texas the preparation of the *Evaluation Schedule* is placed entirely on a voluntary basis, and there has been enthusiastic response. The *Schedules* vividly show where there is a conflict between the official and non-official agencies. Frequently the *Schedule* is a means of eliminating many unnecessary attempts to carry on programs which should be under the official health department.

It is true that some health officers when they see the *Evaluation Schedule* for the first time state that it is too long, takes too much work, and is "a foolish idea." Others immediately see the value of the device and grasp the opportunity to use it in the improvement of their programs. After the health officers have assisted their communities in filling out the *Schedule* for several years, they all agree that the time and energy expended have been worth while. Health unit directors recently returned from military service find the *Evaluation Schedules* and *Health Practice Indices* excellent sources of information as to what has transpired during their absence. In planning their future programs, the *Evaluation Schedules* should show the greatest needs in their communities.

Through the use of the *Schedule*, the local health officer can readily determine whether or not the community is making progress in recognized public health activities by making annual comparisons. The facts can be presented to the local appropriating agencies, and frequently additional appropriations for the advancement of the program can be secured.

As a means of community health education, the *Evaluation Schedule* and *Health Practice Indices* can be utilized in many respects. For example, the health officer can use these publications in joint meetings with other agencies, such as welfare, hospital, and public works groups. The Texas State Department of Health has been actively engaged in using the *Indices* in a state-wide health education program.

For in-service training purposes the State Department of Health has prepared lantern slides of the charts in *Health Practice Indices*. Periodically, the State Department sponsors a general meeting of health unit directors, and by means of lantern slide demonstrations, the health officers can readily visualize which communities are making the most progress in solving urgent public health problems. Where two or more health officers have similar problems, they can hold conferences which are mutually beneficial.

The American Public Health Association has coöperated in every respect with the Texas State Department of Health in the preparation of the *Schedules*. In our opinion the evaluation should be carried on through the State Department of Health in order to avoid duplication and conflicts, and the personnel at the state level should be trained in the methods suggested by the American Public Health Association in order to visualize the entire scope of the program.

Following an invitation from the Association last year, the State Health Officer of Texas sent a group of representatives to an Institute on the Evaluation of Public Health Practices conducted by the School of Public Health at the University of Michigan in Ann Arbor. At this Institute representatives from ten states were given opportunity for the study of *Evaluation Schedules* and were trained in grading the reports.

*Evaluation Schedules* in Texas are

handled in the following manner: Four blank schedules are sent to each community; one is used as a work sheet, one completed copy is filed in the local health unit, one is sent directly to the American Public Health Association, and one to the Texas State Department of Health. Last year, the *Schedules* were graded by both the American Public Health Association and the Texas State Department of Health. The same standards were used in the grading and there was remarkable similarity in the final results.

The American Public Health Association has announced that it will continue to render this service to the various states.

It is hoped that the local communities and the state departments of health will continue to utilize to the fullest extent these tools for improvement in the quality and quantity of public health work.

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# Coördination of Voluntary Health Agencies Is a Live Issue

*Voluntary Health Agencies: An Interpretive Study*, familiarly known as the Gunn-Platt Report, is starting a wave of "town meetings" throughout the country. Although it has been off the press only six months, many health organizations have held forums of executive members to discuss its implications and recommendations — the Onondaga Health Association and the Hartford Visiting Nurse's Association to mention only two examples.

Other agencies have scheduled board member meetings to discuss the study and to ponder its "recommendations to revitalize local voluntary health agencies by means of effecting coördinated health planning and simplifying and unifying appeals for public support," among others. In these discussion meetings, board members are testing their readiness to "adapt their efforts to the changing realities," and "to abandon forms and cling firmly to realities." The Boston Health League and Pennsylvania Planned Parenthood Federation are among agencies that have had this type of soul searching.

But the study has had discussion in other circles as well. The *Survey Mid-Monthly* devoted its entire issue of October 15 to a discussion of the various aspects of the report in seven articles by public health leaders. The *American Journal of Public Health* and *New York Medicine* have discussed it, as well as such varied national magazines as *The Nation*, the *New Republic* and *McCalls*. It has also had a wide discussion in newspapers.

# Observations Concerning the Growth of Three Species of Shigella on Bismuth Sulfite Agar

MILDRED M. GALTON AND NANCY J. COLLINS

*Bacteriologists, Bureau of Laboratories, State Board of Health, Jacksonville, Fla.*

A REVIEW of the literature has failed to reveal any reports recommending bismuth sulfite agar for the isolation of the members of the *Shigella* group. It is generally recognized that no significant growth of these organisms occurs on this medium.[1] The *Difco Manual*, 1943, states that generally members of the dysentery group are inhibited, although some strains of Flexner and Sonne do develop. Some investigators indicate that they are completely inhibited. Sellers [2] regards this as one of the disadvantages of bismuth sulfite agar. In view of these facts it seems feasible to report our observations.

For the past 3 years bismuth sulfite agar, Difco (W. B.) and S. S. agar have been used for direct plating on all feces cultures in the Florida State Board of Health Laboratories. During the first 2½ years we found an occasional culture of *Shigella alkalescens* on W. B. agar, but the number was so small it seemed of no significance. In December, 1944, a definite increase in the number of alkalescens isolations was noticed, the majority of which were found on W. B. agar, while the S. S. plates were negative. At this time pure cultures were plated on W. B. agar and the colonies closely observed. We found that they were quite varied in appearance, ranging from very pale green to a dark, brownish green, smooth and glistening. Some are raised, ameboid in shape, and mucoid in appearance, while others are flat and round. Colonies with dark green center and lighter green periphery are also formed. The predominating type found almost consistently from directly plated feces cultures is a medium green colony, smooth, glistening, slightly raised, and frequently ameboid in shape.

TABLE 1

*Results of 136 Shigella alkalescens Isolations*

| *S. alkalescens* | *S. S.* | *W. B.* |
|---|---|---|
| *Positive* | 65 | 108 |
| " on W. B. only | | 71 |
| " " S. S. " | 28 | |
| " " " " and W. B. | 37 | 37 |

We continued to pick colonies of the types described above and in July, 1945, isolated 5 cultures of *Shigella paradysenteriae*, Boyd 88.* Of these, 3 were negative on S. S. agar. The colonies were very similar to those of *S. alkalescens;* however, in pure culture they were not as varied in color and form, the light green with slightly darker green center, flat and glistening type being predominant. One culture produced brownish green raised colonies with crater-like centers. Other Boyd 88 cultures in our collection produced luxuriant growth when plated from a pure culture on W. B. agar.

* Identification confirmed by Dr. K. M. Wheeler, Connecticut State Health Department Laboratories, Hartford, Conn.

The third species of *Shigella* that we have found on bismuth sulfite agar is *Shigella dispar*. Colonies of this type also resemble those of *S. alkalescens*. The identity of 2 of these cultures has been confirmed.*

While *S. alkalescens* is frequently found in normal persons, more recent reports indicate that it can also cause sporadic cases or epidemics of dysentery and gastroenteritis.[3-5] Therefore, since W. B. agar is so widely used in direct plating of stool cultures, it seems notable that a member of the *Shigella* group apparently grows better on this medium than on S. S. agar. The fact that 2 other species of *Shigella* have been isolated on W. B. agar warrants further observation.

* Identification confirmed by Dr. C. A. Stuart, Brown University, Providence, R. I., and Dr. P. L. Carpenter, Rhode Island State College, Kingston, R. I.

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# Good Health in 1945

The December, 1945, *Statistical Bulletin* of the Metropolitan Life Insurance Company might very well have been entitled "Count your blessings—one by one." It reports, for example, that the maternal death rate in New York City has declined 73 per cent since 1933 and about one-third since 1939 in the United States; that infant mortality in the United States declined to a record low during the war with the greatest relative improvement in the West South Central and Mountain States where the rates are highest; that death rates have continued to decline and the natural increase in population to rise; that the number of marriages, which temporarily declined in 1944, rose again in 1945, with the Mountain and Pacific States having had from a 50 to 85 per cent increase each of the four years beginning with 1942.

The sour note in the statistical picture is a slight increase in fatal accidents due to the increase in motor vehicle accidents following V-J Day and a slight increase in home accidents (Watch that loose rug!). Occupational fatalities were kept at pre-war levels throughout the war and catastrophic accidents were fewer in 1945 than in 1944.

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*and* THE NATION'S HEALTH

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## PLANNING FOR PARENTHOOD

OUR leading Review Article in this issue of the JOURNAL deals with a topic of great and increasing moment in the field of public health. Phenomenal advances in the reduction of maternal and infant mortality during the past quarter-century have been due chiefly to control of environmental factors, improvement in milk supply and in the general nutrition of mother and infant, and protection against microbic infection. We discussed in our February issue possibilities of further improvements as a result of recent progress in our understanding of blood chemistry as associated with the puerperal state. The health worker today is face-to-face with a residual of maternal and infant deaths related to more basic physiological factors. We are forced to the conclusion that future advance must depend not merely on how the baby shall be borne and cared for—but also on whether it should be conceived at all by a given woman at a given time. The logical progress of true preventive thinking leads us inevitably to the consideration of fertility control.

The decision whether childbearing is a relatively safe and wise adventure depends on many factors. At the Spartanburg County Maternal Health Clinic, 40 per cent of the patients are referred because of serious specific illnesses such as tuberculosis, syphilis, heart disease, nephritis, or pellagra; 30 per cent because of anemia or general debility; and 10 per cent for other medical reasons. Low economic status, alone, however, may be a sound contraindication for pregnancy, since our principle must be that no child should be born into a family where it cannot be provided with the essential conditions of healthful living without a strain upon other members of the family which will, in turn, menace their health. In a wider sense, the restraint of population increase within reasonable limits may be a primary requisite for the promotion of general community health in certain areas (as in Puerto Rico or India).

Dr. Stix's review cites ample and striking evidence of the practical effectiveness of the contraceptive procedures now available, a point which has been raised by certain captious critics. Even crude methods applied without special instruction may reduce pregnancy rates by 25–50 per cent, a result by no means

negligible; more reliable methods, applied under advice, reduce pregnancies by 80–95 per cent. Flexibility of procedures and their application to the psychology of individual couples should be strongly emphasized. For the careful studies which have provided our knowledge in this field we owe a very real debt to the late Raymond Pearl and to the investigators supported by the Milbank Memorial Fund, whose recent contributions have been of far-reaching significance.

Birth control is something that should work both ways. We do not "control" an automobile solely by applying the brake. No inconsiderable proportion of non-fertile families desire to have children, as evidenced by the number of adoptions in economically self-sufficient groups. This problem is a difficult one and requires association with well equipped and staffed general hospitals; but it should not be omitted from any comprehensive community program for planned parenthood.

Outstanding advances have been made in the general field of preventive birth control programs in such southern states as the Carolinas, Alabama, Florida, Mississippi, and Texas. The U. S. Public Health Service in 1941 indicated its readiness to assist a child spacing program undertaken by any state (where local laws do not interfere) on the same basis as any other part of its public health program. So far as the medical profession is concerned, Dr. Stix rightly says "For the women to whom pregnancy would constitute a serious health hazard, there is no choice for the physician but to offer the most effective contraceptive methods available, to perform a sterilization operation, or to counsel abstinence for long periods." The second of these alternatives is justified only in certain special cases, and the third is fraught with serious hazards from the standpoint of mental hygiene. The first is, in general, the method of choice. The way for advance is open along an important road toward higher levels of public health. Only in the states of Connecticut and Massachusetts does the iron hand of theocracy bar the road.

## THE NATION'S HEALTH

ON October 4, 1944, the Governing Council of the American Public Health Association adopted an official statement outlining a national program for the protection of the health of the people of the United States.[1] On November 19, 1945, President Truman sent a special message to the Congress on the same subject; and the general principles embodied in the President's message were embodied in a bill (S. 1606 and H.R. 4730) introduced by Senators Wagner and Murray and Representative Dingell, and in a bill introduced by Senators Hill and Burton (S. 191) and by Representatives Neely and Patrick (H.R. 2498, 2755). It would seem of interest, at this time, to compare these four documents and to see how far they coincide and wherein they differ.

*The Problem*—The problem to be solved was outlined in our A.P.H.A. statement as follows: "A large portion of the population receives insufficient and inadequate medical care, chiefly because persons are unable to pay the costs of services on an individual payment basis when they are needed, or because the services are not available." Special deficiencies were noted in regard to physical facilities, such as hospitals, health centers, and laboratories; number and distribution of personnel; number of qualified administrators; provision of organized local public health services; and adequate scope of scientific research.

President Truman says: "In the past, the benefits of modern medical science have not been enjoyed by our citizens with any degree of equality. Nor are they today. Nor will they be in the future unless government is bold enough to do something about it. People with low or moderate incomes do not get the same medical attention as those with high incomes. The poor have more sickness, but they get less medical care. People who live in rural areas do not get the same amount or quality of medical attention as those who live in our cities." He calls special attention to inequality in distribution of doctors and hospitals, to the need for development of public health services and maternal and child care, to the need for furthering research and professional education in the health field, to the importance of developing resources to meet the high and variable costs of medical care and to the problem of compensation for loss of earnings due to sickness.

*General Objectives*—The A.P.H.A. resolutions state that: "1. A national program for medical care should make available to the entire population all essential preventive, diagnostic, and curative services; 2. Such a program should insure that the services provided be of the highest standard, and that they be rendered under conditions satisfactory both to the public and to the professions; 3. Such a program should include the constant evaluation of practices and the extension of scientific knowledge."

The President's message says that "Our new economic bill of rights should mean health security for all, regardless of residence, station, or race—everywhere in the United States." Provisions for maintaining standards of quality, methods of establishing conditions satisfactory both to the public and to the professions and research will be discussed in succeeding paragraphs.

*Scope of Services*—The American Public Health Association statement suggests that, ultimately ("within ten years"), service should be comprehensive, including hospital care, services of general practitioners, and specialists, laboratory and diagnostic services, nursing care, essential dental services, and prescribed medicine and appliances. "At the outset, as many of the services as possible should be provided for the nation as a whole, having regard for resources in personnel and facilities in local areas. The scope of service should then be extended as rapidly as possible."

President Truman says that "a system of prepayment should cover medical, hospital, nursing and laboratory services. It should also cover dental care—as fully and for as many of the population as the available professional personnel and the financial resources of the system permit." The Wagner-Murray-Dingell Bill contemplates comprehensive personal health services, except for possible temporary limitations in the fields of nursing and dental care, and limitations on the period of hospitalization.

Our report considers it "imperative that the plan include and emphasize the provision of preventive services for the whole population." It calls for increased federal and state grants to extend public health services to all areas; and for study of methods to attain better coördination of health activities. President Truman states that "No area in the Nation should continue to be without the services of a full-time health officer and other essential personnel. No area should be without essential public health services or sanitation facilities. No area should be without community health services, such as maternal and child health care." The first title of the Wagner-Murray-Dingell Bill provides for far-reaching stimulation of such services by grants to states through the U. S. Public Health Service and the Children's Bureau.

The American Public Health Association statement says: "In so far as may be consistent with the requirements of a national plan, states and communities should have wide latitude in adapting their services and methods of administration to local needs and conditions." The President says: "Medical services are personal. Therefore, the Nation-wide system must be highly decentralized in administration. The local administrative unit must be the keystone of the system so as to provide for local services and adaptation to local needs and conditions."

*Financial Support*—Our 1944 resolutions state that "services should be adequately and securely financed through social insurance supplemented by general taxation or by general taxation alone" (since social insurance alone would exclude certain economic groups). The President recommends that the public health and the maternal and child health services be made more effective "by more generous grants to the states than are provided under present laws" (tax supported); and he recommends that the basic problem of personal medical care be solved "by distributing the costs through expansion of our existing compulsory social insurance system. . . . How much of the total fund should come from the insurance premiums and how much from general revenues is a matter for the Congress to decide." The contribution from taxation is provided for in the Wagner Bill, Title I, which deals with direct financial coöperation with the states in supporting public health services (Part A), maternal and child services (Part B), and payment for the personal medical care of needy persons (Part C). Prepaid personal health services for employed persons and their dependents are provided under a system of compulsory insurance in Title II, with the source of funds not specified, but indicated to be a combination of insurance premiums and general revenues. Federal grants for hospital surveys and construction under the Hill-Burton Bill would come from general revenues.

Our report calls for "services financed on a nation-wide basis in accordance with ability to pay, with federal and state participation, and under conditions which will permit the federal government to equalize the burden of cost among the states." This, is, of course, provided for under the Wagner-Murray-Dingell and Hill-Burton Bills. Grants to the states are adjusted to per capita income; even insurance premiums are substantially on an ability-to-pay basis. The President points out that the insurance "health fund should be built up nationally in order to establish the broadest and most stable basis for spreading the costs of illness, and to assure adequate financial support for doctors and hospitals everywhere. If we were to rely on state-by-state action only, many years would elapse before we had any general coverage."

*Administration*—The American Public Health Association program makes four specific recommendations in this field.

First, it calls for a single responsible administrative agency at each level—federal, state, and local, and adds that "the public health agencies should carry major responsibilities in administering the health services of the future." The Wagner-Murray-Dingell Bill places administrative responsibility at the federal level for prepaid medical care and all other phases of the program—except grants for maternal and child care and grants for the medical care of needy persons—under the Surgeon General of the U. S. Public Health Service. The system of grants-in-aid to state welfare agencies for the care of needy persons to be administered by the Social Security Board involves a primarily fiscal operation at the

national level. Both the Surgeon General and the Board are under the Federal Security Administrator. The latter provision is obviously essential, since plans cannot be made for spending funds unless the funds are available. Under the Hill-Burton Bill, the Surgeon General would administer the program at the federal level. Therefore the only deviation from the principles of our resolution lies in the continuance of the Children's Bureau as an independent federal operating agency. On the state and local levels the U. S. Public Health Service will, of course, continue to work through state and local health departments in its grants for public health services. It would have wide latitude in negotiating with state and local agencies for the prepaid personal service to employed persons and their dependents. The way is clear for utilization of state and local health departments, in so far as they are ready and competent to undertake such responsibilities. If the health functions of the Children's Bureau should be transferred to a new Department of Health and Welfare—as has been proposed—all parts of the program would be under one tent.

The second of our principles is that the administering agency should have the advice and counsel of a body representing the professions, other sources of services and the recipients of services. This aim is visualized by the President in his statement that "Locally as well as nationally, policy and administration should be guided by advisory committees in which the public and the medical professions are represented." It is spelled out in detail in the Wagner-Murray-Dingell Bill which provides for a National Advisory Medical Policy Council representing the professions and the public, to be appointed by the Surgeon General from panels of names submitted by the professional and other groups concerned and from the public. This Council shall establish special advisory technical regional or local committees or commissions. Its primary duty is to provide for "professional standards of quality to apply to personal health service benefits."

The third point made in our 1944 resolutions is that private practitioners in each local area should be paid according to the method they prefer—fee-for-service, capitation, salary, or any combination of these three. This is precisely the procedure embodied in the Wagner-Murray-Dingell Bill, the general method of payment in each local area to be determined by vote of the general medical and family practitioners (or general dental practitioners) in that area; and there is provision for other methods of payment to be used, as they may prefer, by minorities.

Finally, the American Public Health Association resolutions state that the principle of free choice should be preserved to the population and the profession. President Truman says: "People should remain free to choose their own physicians and hospitals. The removal of financial barriers between patient and doctor would enlarge the present freedom of choice." "Likewise, physicians should remain free to accept or reject patients. They must be allowed to decide for themselves whether they wish to participate in the health-insurance system, full-time, part-time, or not at all." "Our voluntary hospitals and our city, county, and state general hospitals, in the same way, must be free to participate in the system to whatever extent they wish." "Voluntary organizations which provide health services that meet reasonable standards of quality should be entitled to furnish services under the insurance system and to be reimbursed for them." The provisions of the Wagner-Murray-Dingell Bill are in full accord with these policies.

With these provisions in mind, we may return to the statement made by the

American Public Health Association in 1944 that national health services should be rendered " under conditions satisfactory both to the public and to the professions." The way in which the public chooses to accumulate funds to pay for medical service is a matter for the determination of the public, whose money is involved. The way in which that money is spent is, however, of obvious importance to the professions upon whose efforts the quality of service depends. The main issues here are centralization of administration in expert hands, provision for the expression of professional opinion in regard to policy, a method of payment for services rendered by practitioners and agencies satisfactory to them, and freedom of choice for all concerned. The safeguards on these four points outlined by the American Public Health Association are all included in pending legislation.

*Provision of Physical Facilities*—With respect to construction of hospitals, health centers, and laboratories, our report of 1944 advocated construction based on federal aid to the states and allowance for participation by voluntary as well as public agencies (with suitable controls). It advocated grants on a variable matching basis. It held that the U. S. Public Health Service should administer the program on the federal level and that grants should be in accord with the results of state surveys and master plans, or, in the absence of state plans, should follow a U. S. Public Health Service survey. Construction should be undertaken only where there was reasonable assurance of continued support and maintenance.

The recommendation of grants for developing such physical facilities, and precisely under these terms, is included in President Truman's message; and also in the Hill-Burton Bill, though there are differences of opinion whether all of the safeguards and controls are contained in this Bill. Amendments on these points will be under discussion when the House Committee considers the Bill passed by the Senate.

*Training and Distribution of Personnel*—The 1944 resolutions called for further federal assistance in the training of professional and auxiliary personnel and, particularly, of administrators; and for the application of financial stimulus to encourage service in rural areas. This point was emphasized in the President's message and is fully implemented in Titles I and II of the Wagner-Murray-Dingell Bill.

*Research*—Our resolutions called for increased funds to be used by the Public Health Service, by state and local health departments and other nonprofit institutions for research and demonstration; and suggested that grants for such research be made with the " assistance of competent professional advisory bodies." The President strongly recommends the support of research. The Wagner-Murray-Dingell Bill includes research and the performance of demonstrations as suitable subjects for federal aid under both Titles I and II. All such grants would be made in consultation with advisory councils.

In summary, it may be said that the President's message and the two principal Bills which embody it in concrete legislative form appear to be in complete accord with the program adopted by the American Public Health Association as to needs and major objectives; and in almost complete agreement with that program as to details of policy and procedure.

REFERENCE

1. *A.J.P.H.*, 34, 12:1252 (Dec.), 1944.

# THE TREATMENT OF INDUSTRIAL WASTES

A RECENT issue of *Sewage Works Engineering*[1] was devoted to a problem which deserves the serious attention of public health engineers and also of health administrators, since basic questions of general policy are involved.

J. K. Hoskins of the U. S. Public Health Service estimates that the inland waterways of the United States receive a volume of waste from domestic sewage equivalent to the raw sewage of 47 million persons; while these same waterways receive industrial wastes equivalent to the raw sewage of 55–60 million persons. According to M. M. Cohn, "These industrial wastes are as complex as the manufacturing processes and products that come from the industries which produce a great parade of goods and commodities—food, textiles, paper, leather, steel, alloys and other metals, chemicals, rubber and hundreds of other items of a vast nation. They represent the tailings of the materials produced, such as cannery, food wastes, paper-pulp wastes, dairy wastes; dirt and process wastings, such as wool scourings; oils and greases from such industries as slaughterhouses and machine shops; soap wastes from laundries; chemicals and dyes; acids from steel mills and coal mine drainage; and like materials too numerous to mention."

In many instances, proper treatment of industrial sewage makes possible the recovery of waste products whose value would far more than pay for the cost of treatment. F. W. Mohlman lists a large number of instances in which installation of adequate machinery would lead to profitable recovery of waste products and pay-off of the equipment cost in a few years. One plant loses 12 tons of acetic acid per day, which if recovered would pay for the cost of equipment (one million dollars) in about two years. Another loses 5–10 tons of grease per day, in these times of grease shortages. Another loses starch and gluten; another hundreds of barrels of oil per month; another a half-ton or so of copper per day. A considerable number of individual plants and a few trade associations are cited which have attacked such problems as these with intelligence and vigor. A. M. Rawn and H. W. Gehm cite examples of highly profitable recovery of sulfite wool wastes and pulp and paper mill wastes.

Obviously, by no means all industrial wastes can be treated in such a way as to yield financial gain. But—profitable or not—treatment of such wastes before discharge into public sewers or streams must be required in the public interest. Some untreated industrial wastes may work serious damage to the sewerage system itself through corrosive action; and nearly all of them, as D. E. Bloodgood tells us, interfere with the operation of sewage disposal plants. Where they are discharged into public sewerage systems, W. T. Knowlton points out, each industrial plant should be required to pay its share of the excess burden placed upon the disposal plant, on a basis of the additional load of biological oxygen demand and suspended solids involved. English experience shows that a reasonable basis for such charges can be readily worked out. Where the industrial wastes are discharged directly into a stream, public health and waterways authorities should require such preliminary treatment as will avoid menaces to health, creation of nuisances, or damage to aquatic life, and will protect recreational facilities.

The cost of such treatment is a fair and reasonable part of the cost of production. "The cost of wastes treatment is as much a cost of manufacturing as is the cost of the crude material and labor that go into the product." R. D.

Hook, however, calls attention to the fact that "Until there is reasonable uniformity in the requirements of the several states, such a solution to the problem is unlikely to be adopted because of competitive disadvantage." The U. S. Public Health Service might profitably undertake a systematic effort to secure such reasonable uniformity through coöperative state action.

REFERENCE

1. *Sew. Works Eng.*, 16, 10 (Oct.), 1945.

## WALLER SMITH LEATHERS

OUR Association has lost another of its distinguished leaders in the death on January 26 of Waller Leathers.

Dr. Leathers was born in Virginia in 1874. He was trained at the University of Virginia and took his medical degree there in 1895. Like Sedgwick, he began his career as a teacher of chemistry, biology, and physiology. He was on the faculty of various southern universities between 1896 and 1899; and joined the faculty of the University of Mississippi in 1899. Here, he served for a quarter of a century, as Professor of Physiology and Hygiene and organizer and Dean of the School of Medicine. During this period he was Director of Public Health for the State in 1910, and again from 1917 to 1924. Between 1924 and 1945 he was on the faculty of Vanderbilt University as Professor of Preventive Medicine and Public Health and as Dean of the Medical School (from 1928). He held many voluntary posts of far-reaching influence, as adviser to the Rockefeller Foundation, the Commonwealth Fund, the American Red Cross, and the United States Public Health Service.

Dr. Leathers was a nationally outstanding figure in medical education, serving as a member of the National Board of Medical Examiners for many years and as its President from 1930 to 1934 and from 1936 to 1942. He was active in the American Public Health Association, organizing and for many years directing the work of the Committee on Professional Education, and was President of the Association for 1940–1941. He was also a leader in the American Medical Association, holding the posts of Secretary (1920–1923) and Chairman (1923–1924) of its Section on Preventive and Industrial Medicine and Public Health. His connection with these two organizations was of material value in promoting good understanding and coöperation between them in the common cause of public health.

Waller Leathers was an ideal executive and a devoted public servant. He was conscientious and thorough in all that he undertook. His balanced judgment, his fairness and his reasonableness, inspired the confidence which made his wide and constructive influence possible.

## LETTER TO THE EDITOR

TO THE EDITOR:

Because of your editorial entitled "The Test of King Solomon," which appeared in the November issue of the *American Journal of Public Health,* I thought you might be interested in the coöperative activities of the Washington Department of Public Instruction and the Washington Department of Public Health. I am, therefore, briefly summarizing our efforts to date.

Beginning in 1942 there was a concerted effort for the two state departments to work together toward a more coöperative and unified program. This start resulted from the meeting of the health officers' Records and Forms Committee with a committee from the State Department of Public Instruction to revise and plan for the Pupil Health Card and the Pupil Medical Record. The interpretation for the use of each of the cards was also published in booklet form. This brought to realization of both state departments and their local components that coöperation was fruitful and desirable.

In 1944 the State Department of Public Instruction undertook a demonstration project in conjunction with the State Department of Health and funds were obtained from the Kellogg Foundation for improving the overall school health program. In this coöperative effort, the State Department of Health made available to the State Department of Public Instruction a health educator to work full time in this cooperative program. This project resulted in workshops throughout the state for educators and for local health department personnel. It also resulted in the publication by the State Health Department of a *Guide to School Health Services,* which many of the local health departments and school directors are now following.

The *Guide* undertakes to improve the school health program through the development of four broad phases:

1. To revise the curriculum so as to bring it up to date as far as scientific health information is concerned and to see that all students receive instruction in health matters, as well as to eliminate repetition.
2. To improve school health services, including nursing services, physicians' services, sanitarians' services, as well as other health department services which may be available.
3. To provide integration by interesting the local school administrator in the appointment of a health council or committee so that opportunities for teaching experience offered in health programs in the community may be utilized in the school curriculum and by providing an opportunity for students to observe as well as participate in these health programs of the community.
4. To interest the school administrator in designating or employing a school health coordinator whose responsibility would be to see that the three policies outlined above are carried out completely.

The major concern at present is to get the local health officer and his staff to meet with the school administrator and a good representation from the school staff to discuss and plan the local school health program. If these meetings can occur at least twice a year and if the policies laid down in the *Guide* are followed, adequate school health programs will eventually result.

In 1945 the Departments of Public Instruction and of Public Health appointed a Joint Committee on School Health. This joint committee discusses school health problems and lays plans for solving these problems. It also sees to it that this information is carried to their respective local organizations. A committee from the Depart-

ment of Public Health is currently working with a committee from the Department of Public Instruction in revising the latter's health and physical education curriculum.

I am happy to be able to say that the state departments, as well as the local health departments and local school directors, are working more closely together than ever before in the State's history.

ARTHUR L. RINGLE, M.D.
*State Director of Health*
*Seattle, Wash.*

TO THE EDITOR:

Through the medium of the American Journal of Public Health, I want to extend congratulations to Doctor Raymond S. Patterson on his section, "Selected Public Health Bibliography with annotations," emphasis on the "annotations." His light touch certainly traps the reader into running through the whole section.

HELEN R. ODELL
11 South Lake Avenue
Albany 3, N. Y.

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# Dr. Sawyer of UNRRA Reports on Poland

Dr. W. A. Sawyer, UNRRA's Director of Health, completed a two month tour of Poland early in January. He consulted both with Poland's public health officials and the UNRRA staff, visited hospitals, health centers, and medical schools, and lectured on the discoveries and new methods in public health and medicine in five cities to doctors isolated from outside advances in medicine for six years.

One sentence epitomizes his report, "The spirit of Poland is as wonderful as the conditions are appalling." Without food, shelter, clothing, without transport, without medical supplies, only courage and will are left.

Competent health officials both in the central Ministry of Health and in the field are using the facilities provided by UNRRA to cope with the difficulties. UNRRA is bringing in by truck bedsteads, mattresses, and blankets and sheets for hospitals; it is providing ambulances and trucks, many tons of DDT powder, supplies of diphtheria antitoxin, as well as professional health consultants.

A few sentences from Dr. Sawyer's report serve to paint the picture.

"I saw contagious disease sufferers lying on straw ticks and covered with blankets, threadbare and full of holes, which they had brought with them. No others were available. Such sheets as there are in the country are worn and patched. Adults get practically no milk. A standard meal in one hospital was small potatoes in their skins with a cereal gruel, with meat or an egg only once in a week or two. The work of doctors, whose numbers were heavily reduced by the war, is hampered by lack of transportation. I saw a patient being conveyed to a hospital in a horse-drawn farm cart. Lying on straw he was travelling the many miles to the nearest hospital in zero weather. Typhus is present in widely distributed areas, but not a serious epidemic yet. The most serious problem is that of preventing the spread of typhoid fever, a problem aggravated by the tremendous movements of population. In September there were 16,600 notified cases of typhoid. Poland is almost totally devoid of diphtheria toxoid. Tuberculosis is widespread."

These are the conditions which make Dr. Sawyer say, "The picture presented by Poland today is that of a country recovering from a degree of physical destruction and personal suffering hard to imagine and impossible to describe."

# Credit Lines

### SEEING IS BELIEVING

*Credit Lines is indebted to Dr. Raymond S. Patterson for this item*

This may be old-hat to people who gad about the country, but it is pure new-bonnet to one who is glued to his desk. It seems that the extension people at the University of Virginia induced a foundation to subsidize a traveling clinic through which a handful of community leaders were enabled to go out to visit a dozen interesting community ventures in public health and welfare. The "students" talked over their three-state Odyssey when they returned home from their wanderings and some of their conversation is recorded in "We Went to See for Ourselves . . .," the January 1, 1945, issue of the University of Virginia Extension.

Among the community enterprises they saw at firsthand were community recreation projects, schools, libraries, farmers' coöperatives, combined health districts. Then at the end of their trip they sat on the veranda and gossiped about health education with Lucy Morgan and a brace of her disciples. If you read the testimony, little doubt will remain in your mind but that here is a potent mechanism for stimulating better community health services in many sections of our country.

There is no hint of limit of the supply of this unusual publication or of the good nature of the publishers, so it is suggested that you write pronto to the Extension Division of the University of Charlottesville, Virginia, and ask for a copy of Vol. 22, No. 8, which is the identifying number of "We Went to See." While you are imposing on the generosity of the Division, ask for those issues of *"New Dominion Series"* which describe the community health projects the peripatetic scrutinizers visited, and for good measure ask for No. 71 of that series, entitled "The Community and Health. Health Educators Make Planning a Two-Way Process."

### HEALTH EDUCATION AND DENTAL HEALTH IN KANSAS

Credit Lines has just received two volumes, Health Education in Elementary and Secondary Schools, and Health Education in Colleges, outlining a coöperative health education program being carried on by the Kansas State Board of Health and the State Department of Education. The material has been prepared by the Policy-Making Committee on Health Education of the Kansas State Health Education Council, under the direction of Dr. F. C. Beelman, State Health Officer. Professor Clair E. Turner served as consultant. The two volumes are the basis for planning detailed and adapted programs by educational and health authorities and by coöperating professional and lay groups in the community. They outline the general principles and specific objectives upon which each school system can develop suitable curriculum and organization to make health education effective.

Also from Kansas—this time from Dr. Leon R. Kramer, Director of the Division of Dental Hygiene—comes an impressive Dental Health Program for Elementary and Secondary Schools. Perhaps its most important line is in parenthesis—"with special emphasis on community planning."

### A NEW STATE HEALTH BULLETIN IN MONTANA

Credit Lines has received the first

six issues of *Montana Health* which began in August, 1945, in celebration of the first birthday of the Montana Health League. This organization, made up of all the voluntary state health and medical agencies such as the Montana Hospital, Medical, Dental and Tuberculosis Associations, came into being in 1944 to fight a legislative proposal permitting osteopaths to practise surgery and medicine without limit in the state. Having learned the technique of coöperative action, it organized on a permanent basis and was effective also in campaigning for the permissive health unit law passed by the 1945 Legislature, a comprehensive Nurses' Practice Act, and establishment of a tuberculosis control division in the State Board of Health.

The first issue of *Montana Health* summarizes the purposes of the Health League, has an article by the State Epidemiologist, B. K. Kilbourne, M.D., on the new health unit law, another by the State Health Officer, W. F. Cogswell, M.D., on the organization of the State Board of Health, including an organization chart. Succeeding issues discuss a variety of public health and medical problems, presenting a variety of viewpoints.

### THE NEW YORK MEDICAL SOCIETY FIGHTS ANTIVIVISECTION BILL INTELLIGENTLY

With the title, Dogs, Drugs, and Doctors, and the sub-title, The March of Medical Progress will be Promptly Halted if Animal Experimentation is Prohibited by Law, the New York State Medical Society issued a thrilling 35 page booklet that was valuable in opposing the recent Di Constanzo bill in the New York Legislature to restrict animal research. It contains a list of the medical problems that have been solved through research with animals as well as a much shorter list of unsolved problems requiring work with animals—but these include cancer, leukemia, rheumatic fever, arthritis, and infantile paralysis.

The dramatic story is told of Dr. Victor Heiser's suggestion to test a proposed remedy for hookworm on a group of lobbying antivisectionists at a Senate hearing in place of such testing on dogs. The ways in which a wounded G.I. of the late war was speeded to recovery and amputation prevented because of work previously done with dogs are reported. A careful understanding is built up of the care taken to avoid unnecessary pain to the animal—even more, that as careful operative and anesthetizing techniques as with humans are observed. Further, the benefits of animal research to animals themselves are explained, as in the case of black tongue in dogs.

Included with the pamphlet are two fliers, one listing the state senators and assemblymen with suggestions as to what to remind them of in this connection, and a reprint of Betsy Emmons' "The Case for Vivisection," another summary of the history and techniques of the antivivisectionists and of the work of Pasteur, Koch, Ehrlich, and many others whose work was aided by "man's best friend." The New York State Medical Society is to be congratulated for the effectiveness and high intellectual plane of its propaganda against what informed opinion everywhere regards as a misguided campaign.

### LONDON IN 1944

The Interim Report of the County Medical Officer of Health and School Medical Officer for the year 1944 has just become available. It bears study, and with classic British understatement tells much of what can now be told as to rocket bomb damage. For example, "1944 was a trying year for Londoners." We find that no London County Council Hospital escaped damage, that a total of 5,000 beds were

destroyed and an additional 6,000 or 7,000 were temporarily out of action in a total of 660 "incidents"; that of 43,000 patients under treatment in Council hospitals at the end of 1944, 70 per cent were in mental hospitals, although the number declined over the previous year; that nutrition in the London schools was better than in 1938, that the death rate was 16.7 in contrast to 12.3 in 1939. In the meantime, however, it had risen to 18.7 in 1941 and fallen to 15.0 in 1942. An interesting page is one comparing population, birth and death rates, and other vital statistics in London and New York.

TRACHOMA CONTROL IN SAO PAULO

The story of efforts to control trachoma in the State of S. Paulo, whose population of about seven millions is more than one-sixth of all Brazil, is told in Dr. Silvio de Almeida Toledo's "The Struggle Against Trachoma in the State of Sao Paulo," published in 1944. It is detailed and comprehensive, charting the incidence of the disease and outlining the steps for its control, including a State Department of Trachoma, a Trachoma Research Institute, 34 dispensaries, and 20 rural units with their mobile sub-units that cover all the zones where the disease is prevalent. In 1943 nearly 55,000 persons were enrolled in these clinics and units. The author provides a short English summary of his volume which is written in his native Portuguese.

THE CHURCH SPEAKS UP FOR HEALTH INSURANCE

The Council for Social Action of the Congregational Christian Churches publishes a pocket size monthly called "Social Action." The November, 1945, issue is devoted to a discussion of national health insurance. Senator Pepper writes on "Legislation for Good Health"; Dr. Charles L. Hyser, Chairman of the American Dental Health Association, on "The Way to Dental Health"; Dr. Allan M. Butler, Associate Professor of Pediatrics, Harvard Medical School, on "The Charity Tradition in Medicine"; Francis W. McPeek, Director of the Department of Social Welfare of the Washington (D. C.) Federation of Churches, on "If One Member Suffer . . ." They all add up to support of the Wagner-Murray-Dingell Bill.

"We need to move from the position that health is purely a personal matter to the insight that it is often a social one. This will involve modifications in the pattern of our medical services and in our concept of the relation between health and society." John Donne is quoted to the effect that "Any man's death diminishes me, because I am involved in mankind."

The pamphlet includes a good short bibliography of recent material on the subject.

OUR NEIGHBOR CONSIDERS VETERANS

The *Journal of the American Dental Association* started the New Year right by making its January, 1946, number a "Veterans Issue." It discusses opportunities for dentists in public health, in the U. S. Public Health Service, in industry, and in education and research.

The lead article, "Economic Considerations in Reëstablishing a Dental Practice" analyzes the distribution of dentists throughout the country and relates that distribution to per capita income and size of community. The three states with one dentist per 5,000 or more persons are also three of the four states with 1940 per capita income of less than $300 and the three with less than $600 in 1943. Income of dentists is also discussed both in relation to age of dentist and size of community. Incomes were largest not in cities of 100,000 or more, but in those between 25,000 and 100,000. The

earning peak is reached in the years between 40 and 45 without regard to size of community. The number of persons per dentist is consistently in inverse relation to size of community. It is a thoughtful presentation, giving to the returning veteran dentist the background economic information on which he can determine his future location.

Other articles discuss educational opportunities and the G. I. Bill of Rights, summarize wartime legislation affecting dentists, changes in drugs, chemicals, prosthetic devices and dental materials during the war period, and indicate the services of the Bureau of Public Relations available to the veteran.

### SPREAD THE WORK—AND THE FUN

*Journal* readers have already been told of the regional organization of Health Education Section committees (*Journal*, May, 1945, p. 516). Early in 1945 a questionnaire was sent to all members by the Section Secretary so that work on section projects could be widely assigned and in relation to the diversified training and talents of the members.

The replies of 46 members, 5 per cent of the total, to the request for suggestions for improving the Section program have recently been analyzed. The most frequent reply, though variously stated, boils down to "Give more of us an opportunity to participate in Section activities." This is what Charles Hendry called "involvement" in his discussion of several health education projects at the Annual Meeting of the New York City Public Health Association in 1945, and it is the lesson to be learned by other Sections of the Association, and indeed other associations.

The actual language of several replies is interesting—"Use member participation in making the basic philosophy and do not continue the practice of hit-or-miss papers presented by names, each talking to his own interest. This is praiseworthy always, but does not build an integrated program." "More participation by all members. More opportunity for clinic and group discussion and fewer papers by 'experts.'" "If they are good articles, print, bind, and distribute them, but use annual meetings for more valuable discussion." "Give new blood a chance. Except for the last year or two, the Section has been dominated by the same old guard. This questionnaire gives me hope that others can get in their two bits worth." "Utilize members more. Many new members have useful ideas." "Rotate committee membership and officers more generally." "Why not look under some fresher bushel baskets?"

Other suggestions most often given are for more regional meetings, for more bulletins or news letters informing members of Section activities, and for the development of strong local branches. The late war comes in for mention by way of suggestion that visual education so rapidly developed during the war should receive more Section interest.

One more quote, "Accent zeal, purpose, and spirit and methodology will take care of itself. Academic degrees are not the end of the journey, but barely the setting out upon it."

### RESTAURANTS KNOW THE MINNEAPOLIS HEALTH DEPARTMENT

Dr. D. C. Gates, Director of Health Education of the Minneapolis Health Department, sends a copy of a recent letter from the manager of the Minneapolis Restaurant Association to its constituent members. The moral is, "the Health Department is operating for you." He then tells them that the Department is constantly studying the problems of sanitation in its million and one phases, and suggests calling its staff in for recommendations as to improvement in restaurant organization and

sanitation. And he lists 13 achievements of the previous year affecting the whole community.

Dr. Gates also sends us three attractive leaflets announcing a free food handlers' school which emphasizes, with appropriate and funnier than funny-page drawings, "that the health of the people is *your* responsibility," one entitled "Facts about Diphtheria," and a third, a congratulation card for the new baby that announces the immunization schedule.

### SANITARY REQUIREMENTS FOR SCHOOL LUNCHES

The Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association has recently published a statement describing the "Sanitary Requirements for School Lunches." Recognizing the importance of school lunches from the standpoint of nutrition and practical health education, the committee suggests protective measures to avoid contamination of food. Those measures are concerned with:

> The condition, attire and conduct of the food handlers, condition of the premises and equipment, condition of the food, its preparation, care, and storage, including the special precautions to be taken with special types of food, and the supervision of personnel and premises.

The "ABC's of School Lunch Sanitation," and an essential list of questions with which the statement closes, should be in the hands of all lunchroom directors, principals, school physicians, school nurses, and health officers, as well as those directly handling food. Incidentally, the statement would be extremely useful in summer camps, industrial plant cafeterias, and in places where meals are served for short periods by inexperienced help, such as at county fairs, church suppers, and fraternal benefits.

Copies may be obtained from the Chairman of the Committee, Thurman B. Rice, M.D., State Board of Health, Indianapolis 7, Ind.

### WEST VIRGINIA IS HEARD FROM

"Safeguarding Your Health" is the title of a booklet telling about the community services of the Monongalia County Health Department. It serves a population of about 50,000, has been a full-time county unit since 1929, became a Public Health Training Center in 1936, and moved into a permanent health center building in 1944. The story is well told and illustrated.

### PREMARITAL LAWS

We are indebted to Dr. Claude P. Brown, Assistant Director of the Pennsylvania Department of Health Laboratories for a copy of the November 1945 *Pennsylvania's Health*. This contains a compilation of premarital laws of the various states, prepared by the laboratories for the use of the doctor consulted by the bride and groom. We are informed that additional copies are available.

### ADVERTISING FOR HEALTH OBJECTIVES

The *New York Times* of January 30, 1946, has an illustration of a significant new technique of securing public attention for a health objective. Under the title, "More Important Than Reaching the Moon; Child Health," the International Latex Corporation, in two columns of paid advertising, reprints a *Washington Post* editorial in favor of Senator Pepper's proposed Maternal and Child Welfare Act.

### SERVICES FOR UNMARRIED MOTHERS

A joint statement on *Services for Unmarried Mothers and Their Children* has been prepared by the Children's Bureau, Bureau of Public Assistance (Social Security Board) and the American Red Cross. It is an 18 page booklet describing the present situation, the

plans and resources to meet the needs. Its purpose is to encourage coördinated planning and action to provide the needed service. Copies may be obtained from the Superintendent of Documents, Gov. Ptg. Off., Washington, D. C. Price, 10 cents.

WORTH ACQUIRING

*No, No, a Thousand Times No*—An illustrated leaflet, for use in well child conferences, that suggests many simple ways of reducing the number of noes a child receives. Play space of his own, precious or fragile knickknacks out of reach, and time to learn are all suggested, in the interest of the child's mental health. Bureau of Maternal and Child Hygiene, Hartford Health Department, Hartford 4, Conn.

*Food and Nutrition*—Prepared jointly by the State Departments of Health and of Education and four rural county schools as a textbook for teachers and pupils in California. Gives not only the basic principles of nutrition but also a brief history of man's quest for food and several appendices, including calorie tables for different foods and an extensive bibliography classified separately for teachers and children. California State Department of Education, Sacramento, Calif.

*Books on Home and Family Living—Michigan Public Health* of October, 1945, publishes this list prepared by the Michigan Department of Health's consultant in Parent Education. It lists both books and magazine articles, classifying them according to the various periods between infancy and maturity. State Department of Health, Lansing, Mich.

*A Man's Castle*—A National Program for the Prevention of Home Accidents. Sponsored by 31 organizations from American Association for Adult Education to Zonta International, and including the American Public Health Association, this attractive booklet, liberally illustrated in red, tells all about home accidents. They kill 30,000 persons a year of whom 6,000 are under school age; fires in homes cost over a million dollars a year. Accidents can be reduced by community action, by proper house construction, design, and furnishing, by safe equipment and by education through newspapers, magazines, radio, and motion pictures. The goal—"Home is where all members of the family should always be able to find comfort and convenience, health and security, freedom from danger." Available without charge from the National Safety Council, 20 N. Wacker Driver, Chicago 6, Ill.

*Twenty-five Years of Effort and Service*—A silver anniversary report in a silver cover, and with excellent typography and illustrations, this description of the Cincinnati Public Health Federation (Bleecker Marquette, Executive Secretary) has fertile ideas for reporting on community stewardship. Public Health Federation, Cincinnati, Ohio.

*A Guide for Nurses* in the Nursing Care of Patients with Infantile Paralysis—a revision prepared by the Joint Orthopedic Nursing Advisory Service of National Organization for Public Health Nursing and the National League of Nursing Education. Published and distributed without charge by the National Foundation for Infantile Paralysis, 120 Broadway, New York 5, N. Y.

# BOOKS AND REPORTS

*All reviews are prepared on invitation. Unsolicited reviews cannot be accepted. All books reviewed in these columns may be purchased through the Book Service.*

**When You Marry**—*By Evelyn Millis Duvall and Reuben Hill. New York: Association Press,* 1945. 450 pp. Price, $3.00.

The authors of this volume are respectively on the staff of the National Conference on Family Relations and the Department of Sociology, Iowa State College. The foreword by Professor Ernest W. Burgess of the University of Chicago points out the timeliness of this functional approach to the teaching of marriage and family living. As he says, American youth by the hundreds of thousands are concerned as never before with problems of adjustment, often growing out of the large number of hasty marriages, but also from the group who have postponed marriage.

The book includes four parts, Anticipating Marriage, What It Means to Be Married, The Making of a Family, and Family Life Yesterday, Today and Tomorrow. Appendices include a Marriage Prediction Scale that fascinates adolescents and a list of recognized marriage and family counseling services.

The authors maintain that marriages which have been preceded by study and careful mate selection, and which are followed by skillful handling of adjustments, have high success rates. The book is best suited for reading and discussion at the college level, but also has meaning for high school groups under good leadership. The text is in easy style, well illustrated, interspersed with test questions set up in provocative form, and with excellent suggestions for further study.

Adolescents will profit by reading such chapters as that entitled "Dating: Practice Makes Perfect"—subtitles include, What to do on a date; Going Steady; How to break off with a Steady; Dating is Preparation but it is also Fun; What about Petting? etc. Especially well done from the mental hygiene angle is "Common Conflicts in Marriage."

This volume, in the opinion of the reviewer, represents the best of its class and marks a new achievement in what may be called sex hygiene in its most inclusive sense.

REGINALD M. ATWATER

**Safe and Healthy Living**—*By J. Mace Andress, Ph.D., I. H. Goldberger, M.D., Margaret P. Dolch, and Grace T. Hallock. New York: Ginn & Company,* 1945.

Book I—Spick and Span, 152 pp. Price, $.84.

Book II—The Health Parade, 184 pp. Price, $.88.

Book III—Growing Big and Strong, 252 pp. Price, $.92.

Book IV—Safety Every Day, 258 pp. Price, $.92.

Book V—Doing Your Best for Health, 298 pp. Price, $.96.

Book VI—Building Good Health, 298 pp. Price, $1.00.

Book VII—Helping the Body in Its Work, 314 pp. Price, $1.04.

Book VIII—The Healthy Home and Community, 339 pp. Price, $1.08.

This new edition of health textbook series for grades one to eight presents in typical fashion the most recent material on health and safety for class-

room instruction. The books are well illustrated with photographs of appropriate age groups in healthful experiences. Sketches and diagrams also enliven the printed word. The chapters are developed in the form of Units of Instruction. Each unit contains basic information, often in story form, questions for thought and discussion, tests, suggested activities, and a general word study exercise. A list of other books to read, a dictionary of health words, and a word index make valuable additions to the volumes.

The list of titles for each book are an indication of the enlivened contents. "Spick and Span," "The Health Parade," and "Growing Big and Strong" are apt titles for the early elementary grades. The titles for the fourth, fifth, and sixth graders offer increasing responsibility for the increasing years: "Safety Every Day," "Doing Your Best for Health," and "Building Good Health." The later elementary or junior high titles place greater emphasis upon home and community living, "Helping the Body in Its Work," and "The Healthy Home and Community."

These textbooks are written largely for the city school child with a good background of home and community living. Lack of understanding of many rural problems of living are evident. Like all school textbooks this series presents the accepted standards of health, and seldom helps the pupils to take what they have and build toward a more healthful way of living within their own environment. For the most part the suggested activities deal with real life situations and not the earlier fairy-story-busy-work type of activities. It is to be regretted that many of the references in the list of books to read, which appears in each volume, are not as modern and up-to-date as the general contents of the books themselves.

REBA F. HARRIS

**Scientific Societies in the United States**—*By Ralph S. Bates, Ph.D. New York: Wiley,* 1945. 246 pp. Price, $3.50.

The reader of this volume will find not a directory in the usual meaning of the term, but an interesting account of the history and influence of scientific societies in the United States, including not only those of national scope but many state and local societies as well. It is a general survey of the pattern of development of scientific organizations.

The material is divided into four periods: 18th century, 1800–1865, 1866–1918, 1919–1944. For each period the author depicts the main scientific trends and describes the beginnings and functions of the societies developing from the background of that period.

There is an extensive bibliography and also a good index.

EVA R. HAWKINS

**Vitamins and Hormones** — *Advances in Research and Applications. Vol. III. Edited by Robert S. Harris and Kenneth V. Thimann. New York: Academic Press,* 1945. 420 pp. Price, $6.50.

This is the third volume of a series under the same title started in 1943 with the purpose of reviewing and appraising research in these fields. It is almost essential in these days of voluminous scientific literature to have a specialist evaluate the status of a subject and point out gaps and controversial issues with suggestions for further research. This is exactly what the authors of the nine articles in the present volume have done in well organized and completely documented form. The subjects covered in the present articles do not duplicate those of the previous volumes, although there is bound to be some overlapping even in the articles in this volume when

different authors discuss closely related subjects.

The titles and authors of the nine articles in Volume III are: The Interrelation of Vitamins by Moore; The Synthesis of B Vitamins by Intestinal Bacteria by Najjar and Barrett; Sulfonamides and Vitamin Deficiencies by Daft and Sebrell; Manifestations of Prenatal Nutritional Deficiency by Warkany; Growth Factors in Microbiology by Knight; Possibilities in the Realm of Synthetic Estrogens by Dodds; Chemistry of Anti-pernicious Anemia Substances of Liver by Subbarow, Hastings and Elkin; Mechanism of Action and Metabolism of Gonadotropic Hormones in the Organism by Zondek and Sulman; The Rôle of Acetylchlorine in the Mechanism of Nerve Activity by Nachmansohn.

This volume should be a valuable reference to help research workers and teachers in biochemistry, physiology, endocrinology, microbiology, nutrition and related medical sciences keep in touch with work reported in a wide variety of journals. HELEN S. MITCHELL

**Your Child from One to Six**—*Publication 30, Children's Bureau (rev. ed.). U. S. Department of Labor, Washington: Supt. of Documents,* 1945. 147 pp. Price, $.15.

This is a complete revision of *The Child from One to Six,* a booklet, widely used in this and other countries since it was last rewritten in 1931.

The greatest difference between the previous and the new edition is a difference of approach rather than one of content. It reflects the trend of the past ten years in which the yardsticks applied to the growth and development of children have become more flexible and the "musts" of a child's performance at certain ages have become fewer.

Family relationships and their importance for all phases of the physical and mental development of children are stressed in each of the 29 chapters which are logically subdivided and cover the most important aspects of growth and development of preschool children. The language is clear, the print more liberally spaced and the text, illustrated by excellent photographs, should hold the interest even of those parents who are not accustomed to serious reading.

This up-to-date and attractive booklet will be a popular educational tool in the hands of physicians, nurses, and other workers in the field of child care. One should be able to find it in all libraries, clinics, doctor' offices, and public health nursing bags.

FRANZISCA W. RACKER

**Cleveland Market Data Handbook**—*By Howard Whipple Green. Cleveland: Real Property Inventory of Metropolitan Cleveland,* 1945. 69 pp. Price, $2.50.

This volume has been published under the direction of Howard Whipple Green, who is Secretary and Director of Statistics and Research, Cleveland Health Council, Cleveland, Ohio, and represents a unique and compact reference book of pertinent facts about Cleveland, including data on population, cost of living, employment and unemployment, telephones, automobile sales and registration, postal receipts, bank deposits and other financial data, new construction, mortgage finance, public finance and taxation. A series of tables and charts presents this material for the 35 year period since 1910.

The reviewer wishes that comparable data were available for all the larger cities and states, because they are essential in any comprehensive approach to public health.

REGINALD M. ATWATER

# A SELECTED PUBLIC HEALTH BIBLIOGRAPHY WITH ANNOTATIONS

RAYMOND S. PATTERSON, PH.D.

**How Much Do Children Eat?**—Three researchers have been measuring the increasing amounts of food that children manage to stow away during the years from infancy to age 10, and they find that the allowances set by the Food and Nutrition Board do not match up to the performance of children in middle class families. The researchers found a lot else, but that is one item that may stick in your memory.

BEAL, V. A., *et al.* Nutrition Studies on Children Living at Home. Am. J. Dis. Child. 70, 4:214 (Oct.), 1945.

**Commended for Its Wisdom**—Shall we teach the "facts of life" or that sex is bound up in emotion? A British writer makes the following daring assertion: "For my part I *do* believe that certain aspects of sex and sex behavior are sometimes rather ludicrous, that sex may sometimes quite properly be the occasion of humor, and I would therefore emphasize the importance of avoiding the sin of hypocrisy."

BIBBY, C. Sex Education. Med. Officer. 74, 23:187 (Dec. 8), 1945.

**Removing Some of the Mystery**—As in the country, so in the city, poliomyelitis is spread principally by patient to patient contact. In a painstaking study carried out in Chicago last summer, the infection was found to be as contagious for toddlers as are the other diseases of childhood. The researchers unearthed no evidence that insects played a rôle in the spread of the disease.

CASEY, A. E., *et al.* Transmission of poliomyelitis by Patient to Patient Contact (and two related papers). J.A.M.A. 129, 17:1141 (Dec. 22), 1945.

**Better Health for Americans**—Though the ideas stem from the cloistered precincts of a medical school, it is refreshing to see in one of our medical journals a dispassionate presentation of these four problems: distribution of treatment facilities, payment for medical services, organization of such services, and economic opportunities for physicians. This is the first paper of what promises to be a rewarding symposium.

CLARK, D. A. Problems of Medical Care. New England J. Med. 234, 2:53 (Jan. 10), 1946.

**"This Fight for Health . . ."**—Canada's plans for a more effective health service and a system of health insurance are presented in some detail. Canadians seem to be quite prudent people, much like ourselves, yet they go ahead with their prepaid medical care scheme with no evident worry about its undermining their ordained way of life or concern about whether or not it is communistic in origin.

CLAXTON, B. Mapping Our New Frontiers of Health. Canad. Pub. Health J. 36, 12: 455 (Dec.), 1945.

**Wild Prediction Department**—What do you suppose would happen if an agency issued a completely honest report, accurate and penetrating as an x-ray, listing failures as well as accomplishments and straddling no controversial issues—even the one of need for the agency's own program? The writer makes this prediction: of course, the executive would be fired, but if the trustees did not burn every copy, the public response would be amazing.

CROSBY, A. L. Toward Better Annual Reports. Channels. 23, 3:1 (Dec.), 1945.

**Earmarks of a Crisis**—This brief excerpt tells a long story: ". . . while the over-all rate of acquisitions of new (venereal) infections by all Navy men has dropped substantially from pre-war levels, the trend for 1945 is up—and drastically so . . ." What the Navy is doing with the candidates for infection while still in uniform and the parallel civilian plans are things you should know about.

FERREE, J. W., and ENNES, H. The Venereal Disease Heritage of World War II (and) HELLER, J. R. The Postwar Syphilis Control Problem in the United States. J. Soc. Hyg. 31, 8:515 (Nov.), 1945.

**Here's a Treat**—The man who had the God-given curiosity to examine a phenomenon which many other bacteriologists must have seen and ignored, tells about his part in the production of the drug that is doing most to change the complexion of public health administration.

FLEMING, A. The Story of Penicillin. Mod. Med. 13, 12:57 (Dec.), 1945.

**Complete Health Service** — The Permanante Health Plan proves that medical care can be furnished within the means of the average American, and if it is offered to him that same mythical Mr. A. A. will rush to subscribe for it in advance. The writer says he knows this is so because he and his colleagues have offered the service.

GARFIELD, S. R. The Plan That Kaiser Built. Survey Graphic. 34, 12:480 (Dec.), 1945.

**Freezing Kills Them**—How can trichinosis be prevented? Microscopic inspection of carcasses has been tried and found wanting. Cooking city garbage would help but not stop spread to all pigs. The deep freezing of all pork products for human consumption might do the trick. As one in six of us gets an infestation at one time or another it would seem that any likely method should be tried.

GOULD, S. E. An Effective Method for the Control of Trichinosis in the United States. J.A.M.A. 129, 18:1251 (Dec. 29), 1945.

**We Need To Know the Normal**—Are low-blood pressure and low hemoglobin chiefly responsible for the fatigue that young women suffer? Many are told so, and treated for these conditions. This study of "normal" girls in Cambridge suggests that these are not the real causes of "that tired feeling."

HARDY, H. L. The Clinical Significance of Data Accumulated in Medical Care of Young Women. New England J. Med. 233, 26:811 (Dec. 27), 1945.

**Still Held at Belsen**—Intimate impressions are given about the long-range problems of the Stateless Nazi victims who have no home to go to and wouldn't dare to go there if they had. Pictured too are the hideous hygienic conditions they survived.

HARRISON, E. G. The Last Hundred Thousand. Survey Graphic. 34, 12:469 (Dec.), 1945.

**Calculated Crimes**—Here is told how the British medical officers dealt with the terrified horde of liberated D.P.'s who — lousy, diseased, and starved—rushed for the Rhine. The picture of the hygienic conditions from which they escaped will make you sick.

HARVEY, W. C., and MARKOWE, M. The Rhine River Barrier (and) MANN, B. Hygienic Problems in Displaced Persons' Camps in Germany. Pub. Health. 59, 3:31 (Dec.), 1945.

**Teeth Are To Chew With**—Blaming dietary deficiencies for modern man's defective teeth has no scientific basis argues this writer. If this were so, present-day diet would have had an adverse effect upon the whole body. Yet we know that civilized men are greatly superior to primitives. No, the teeth are poor because we don't use them, and how to induce us to put them to work is a poser.

KLATSKY, M. Function versus Nutrition as a Controlling Factor in Dental Health: An Anthropologic Survey. J. Am. Dent. A., 32, 21:1416 (Dec.), 1945.

**For Thin and Fair Skins**—Holding that this department might well be put occasionally to some useful purpose, we pass along to you the information that one application of dark red veterinary petrolatum will give complete protection against sunburn for a whole day and water will not wash it from the skin.

LUCKIESH, M., *et al.* Protective Skin Coatings for the Prevention of Sunburn. J.A.M.A. 130, 1:1 (Jan. 5), 1946.

**Upgrade, Peak, and Downgrade**—Contagiousness, argue these writers, is not a fixed characteristic of tuberculosis. In a highly tuberculized environment, the disease is not a contagion. In not-yet-tuberculized or detuberculized environments, tuberculosis is contagious. The legal implications of this thesis are discussed.

MAYER, E., and RAPPAPORT, I. Is Tuberculosis Contagious? Compensation Medicine. 1, 1:5 (Jan.), 1946. (Note the 1:1 please!)

**What an Expectant Health Worker Should Know**—Plenty of jobs are available in public health for those who are adequately trained for them. The meaning of adequate training for the medical graduate constitutes the burden of this paper which also paints an inviting picture of the opportunities and responsibilities.

PARRAN, T. Opportunities for the Medically Trained in Public Health. J.A.M.A. 129, 17:1161 (Dec. 22), 1945.

**Little Rhodie Pioneers**—This is mostly about the Rhode Island Sickness Compensation Act and the reasons other states have not followed suit, but it contains a list of bills on compulsory sickness insurance introduced in, and ignored by, the various state legislatures over the past five years.

STUCKE, A. Notes on Compulsory Sickness Insurance Legislation in the States, 1939–44. Pub. Health Rep. 60, 52:1551 (Dec. 28), 1945.

## BOOKS RECEIVED

*Listing in this column acknowledges the receipt of books and our appreciation to the senders. Space and the interests of readers will permit review of some, but not all, of the books listed in future issues.*

ANNUAL REPORT OF THE FEDERAL SECURITY AGENCY, Section 4. U. S. Public Health Service. Washington, D. C.: Govt. Ptg. Office, 1945. 156 pp. Price, $.30.

BIRTHS, INFANT MORTALITY, MATERNAL MORTALITY IN 1942. GRAPHIC PRESENTATION. Washington, D. C.: Dept. of Labor, Children's Bureau, 1945. 17 pp.

A BLIND HOG'S ACORNS. VIGNETTES OF THE MALADIES OF WORKERS. By Carey P. McCord, M.D. Chicago: Cloud, Inc., 1945. 311 pp.

CLINICAL ELECTROCARDIOGRAPHY. By David Scherf, M.D., and Linn J. Boyd, M.D. 2d ed. Philadelphia: Lippincott, 1946. 267 pp. 243 illus. Price, $8.00.

THE COMMONWEALTH FUND. TWENTY-SEVENTH ANNUAL REPORT OF THE GENERAL DIRECTOR FOR THE YEAR ENDING SEPTEMBER 30, 1945. New York: Commonwealth Fund, 1946. 59 pp.

DEFINITIONS OF TERMS AND INSTRUCTIONS FOR REPORTING MONTHLY STATISTICS OF FAMILY CASEWORK. By the Department of

Statistics of the Russell Sage Foundation. New York: Russell Sage Foundation, 1946. 26 pp. Price, $.20.

THE EXPERIMENTAL HEALTH PROGRAM OF THE UNITED STATES DEPARTMENT OF AGRICULTURE. A Study Made for the Subcommittee on Wartime Health and Education of the Committee on Education and Labor, United States Senate. Washington, D. C.: Govt. Ptg. Office, 1946. 166 pp.

HEALTH GUIDES AND GUARDS. By Francis P. Wall and Louis D. Zeidberg, M.D. 3d ed. New York: Prentice-Hall, 1946. 392 pp. Price, $2.75.

HEALTH NEEDS OF SCHOOL-AGE CHILDREN AND RECOMMENDATIONS FOR IMPLEMENTATION. Reprint from "School Life," November, 1945. Washington, D. C.: Govt. Ptg. Office, 1945. 8 pp.

HOUSING POLICY. Housing standards, the organisation and financing of low-cost housing and the relation of house building to the general level of employment. Montreal: International Labour Office, 1945. 28 pp. Price, $.25.

JOBS AND THE MAN. A Guide for Employers, Supervisors, Interviewers, Counselors, Foremen, and Shop Stewards in Understanding and Dealing with Workers—Veterans or Civilians. By Luther E. Woodward, Ph.D., and Thomas A. C. Rennie, M.D. Springfield, Ill.: Thomas, 1945. 132 pp. Price, $2.00.

LAW OF MARRIAGE AND DIVORCE SIMPLIFIED. By Richard V. Mackay, LL.B., LLM. New York: Oceana Publications, 1946. 74 pp. Price, $1.00.

MAKING HEALTH VISIBLE. Cleveland: Cleveland Health Museum, 1945. 32 pp. Price, $.25.

A MANUAL OF PHYSICAL THERAPY. By Richard Kovacs, M.D. 3d ed. Philadelphia: Lea & Febiger, 1944. 309 pp. 118 illus. Price, $3.25.

A MEDICAL STUDY OF THE EFFECT OF TNT ON WORKERS IN A BOMB AND SHELL LOADING PLANT AND REPORT OF FATAL CASE OF APLASTIC ANEMIA. U. S. Public Health Service, Public Health Bulletin No. 291. Washington, D. C.: Govt. Ptg. Office, 1945. 98 pp. Price, $.25.

THE MILK INDUSTRY. A Comprehensive Survey of Production, Distribution and Economic Importance. By Roland W. Bartlett, Ph.D. New York: Ronald Press, 1946. 282 pp. Price, $4.50.

1943–1944 REPORT OF THE NEW YORK STATE COMMISSION TO FORMULATE A LONG RANGE HEALTH PROGRAM. Legislative Document (1944) No. 56A. Albany: Williams Press, 1945. 213 pp.

NUTRITION AND CHEMICAL GROWTH IN CHILDHOOD. Volume II. Original Data. By Icie G. Macy, Ph.D., Sc.D. Springfield, Ill.: Thomas, 1946. 1027 pp. Price, $10.00.

PROTOZOOLOGY. By Richard R. Kudo, D.Sc. 3rd ed. Springfield, Ill.: Thomas, 1946. 778 pp. 336 illus. Price, $8.00.

PUBLIC HEALTH AND THE AMERICAN WAY. By H. B. Anderson. New York: Citizens Medical Reference Bureau, Inc., 1945. 238 pp. Price, $2.50.

THE SOCIAL PROBLEMS OF AN INDUSTRIAL CIVILIZATION. By Elton Mayo. Boston: Harvard Business School, 1945. 150 pp. Price, $2.50.

A STUDY OF NURSING SCHOOL HEALTH PRACTICES AND A RECOMMENDED HEALTH PROGRAM FOR STUDENT NURSES. By Burnet M. Davis, Robert H. Felix, Charlotte Silverman and Marion E. Altenderfer. Supplement No. 189 to the Public Health Reports. Washington, D. C.: Govt. Ptg. Office, 1945. 22 pp. Price, $.10.

TUBERCULOSIS INDUSTRIAL NURSING AND MASS RADIOGRAPHY. Prepared by Julie E. Miale, R.N. New York: National Tuberculosis Assn., 1945. 67 pp.

TUBERCULOSIS HOSPITAL. 200 Bed Capacity. American Trudeau Society. New York: National Tuberculosis Assn., 1945. 10 pp.

TUBERCULOSIS MORTALITY IN MAJOR CITIES, UNITED STATES, 1942–43. Vital Statistics—Special Reports. National Summaries. Washington, D. C.: Department of Commerce, Bureau of the Census, 1945. Vol. 21, No. 14. 44 pp.

VD MANUAL FOR TEACHERS. By Samuel D. Allison, M.D., and June Johnson, M.S. New York: Emerson Books, 1946. 149 pp. Price, $2.00.

WHAT NEXT FOR NEW YORK'S JOADS? New York: Consumers League of New York, 1946. 32 pp. Price, $.25.

WHITE VERSUS BROWN FLOUR. By F. L. Dunlap, Sc.D. Newark: Wallace & Tiernan, 1945. 272 pp.

# ASSOCIATION NEWS

SEVENTY-FOURTH ANNUAL MEETING
AMERICAN PUBLIC HEALTH ASSOCIATION
CLEVELAND, OHIO — NOVEMBER 11

## RESOLUTION ENDORSING CONTROLLED ANIMAL EXPERIMENTATION

Adopted by the Executive Board of the American Public Health Association
January 25, 1946

The public health professions have noted current legislative efforts to prohibit the use of animals for scientific medical research.

The American Public Health Association, representing those who are intimately engaged especially in the application of medical science, strongly endorses the continued use of controlled animal experimentation. Such unhampered experiments we know to be essential for continued medical progress.

The public should be fully aware of the consequences which would follow the enactment of any legislation forbidding the use of dogs or other animals for experimental purposes under responsible direction, such as that in the universities and medical schools. It is common public knowledge that a large part of the recent advances in protecting the health of children grows out of the use of dogs for experimental purposes.

We know that the surgeon's skill goes back to operations which he has repeatedly made as a student under supervision in the medical school.

Is it desirable, for instance, that new drugs or new surgical technics should be tried first on babies or on dogs?

It is inconceivable in this day when the benefits of science are so manifest that the people will wish to shackle the hands of those whose chief concern is the lengthening of life and the prevention of disease.

We call upon all intelligent citizens who have the public interest at heart to oppose openly any attempts to restrict the essential freedom of scientific research.

## DR. ROSCOE P. KANDLE APPOINTED ASSOCIATE FIELD DIRECTOR

The Executive Board of the American Public Health Association has announced the appointment of Roscoe P. Kandle, M.D., M.P.H., Fellow, A.P.H.A., as Associate Field Director on the staff of the Committee on Administrative Practice. Dr. Kandle began his field assignment in January, working first on the survey of the Colorado State health services with Carl E. Buck, Dr.P.H., Field Director.

Dr. Kandle graduated from Jefferson Medical College, Philadelphia, in 1934 and from the Johns Hopkins School of

Hygiene and Public Health in 1938. He served for four years on the staff of the New Mexico State Department of Health, for a short time with the New Jersey State Department of Health, and since 1940 has been identified with public health administration in Louisiana, most recently as the Director of the Division of Local Health Services.

Dr. Kandle's responsibilities will be similar to those carried for several years past by George T. Palmer, Dr.P.H., now Senior Sanitarian (R), U. S. Public Health Service, Washington, D. C. His special assignment will be in connection with state health studies and the use of the Evaluation Schedule by state and local departments of health and in the periodic publication by the Committee on Administrative Practice of *Health Practice Indices*.

*Roscoe P. Kandle*

## APPLICANTS FOR MEMBERSHIP

*The following individuals have applied for membership in the Association. They have requested affiliation with the sections indicated.*

### *Health Officers Section*

Lt. C. Dale Barrett, Jr., M.C., WDPC, A-3, Fort Devens, Mass., Director, Ottawa County Health Dept., Grand Haven, Mich. (upon release from service)

Wayne G. Brandstadt, M.D., Johns Hopkins Univ., School of Public Health, Baltimore 5, Md., Student

Sheldon M. Caplan, M.D., 208 E. 21 St., Chester, Pa., Senior Asst. Surgeon (R), U. S. Public Health Service

Andrew H. Dibble, M.D., Central Louisville Health Center, 1125 Cedar Court, Louisville, Ky., Director

Malcolm J. Ford, M.D., Johns Hopkins Univ., School of Public Health, Baltimore 5, Md., Senior Asst. Surgeon, U. S. Public Health Service

James P. Jones, M.D., Ritchie County Health Dept., Pennsboro, W. Va., Health Officer

Robert H. Lowe, M.D., 24 W. 69 St., Apt. 6B, New York 23, N. Y., Student in Hospital Administration, Columbia Univ. School of Public Health

Clarke W. Mangun, Jr., M.D., State Board of Health, Bureau of Tuberculosis, Jacksonville, Fla., Acting Director

Alfred Mordecai, M.D., 806 S. Hawthorne Rd., Winston-Salem, N. C., District Health Officer, Davie-Stokes-Yadkin District Health Dept.

Edward C. Mulliniks, M.D., Sullivan County Health Dept., Blountville, Tenn., Director

Harry W. Weest, Jr., M.D., South Office Bldg., Room 519, Harrisburg, Pa., State Secretary of Health, State Health Dept.

### *Laboratory Section*

J. Stewart Bell, M.D., D.P.H., 124 Pinewood Ave., Toronto, Ont., Can., Student, School of Hygiene, Univ. of Toronto

Theodore F. Dozois, Ph.D., 1392 University Ave., Berkeley 2, Calif., Research Assoc., Virus Research Lab., State Dept. of Health

Beauford A. Kennedy, 2915 Macey St., Jackson, Miss., Bacteriologist, State Hygienic Lab.

Lt. Max Loewe, Sn.C., Northington General Hospital, No. 227, Tuscaloosa, Ala., Bacteriologist

Carroll Lowe, 724 Pecan Blvd., Jackson 40, Miss., Senior Microbiologist, Parasitology Dept., Div. of Labs., State Board of Health

Anthony B. Manera, 654 Mt. Pleasant Ave., Providence 8, R. I., Inspector of Dairies, Providence Health Dept.

Harold C. Maynard, 2912 Migel Pl., New York 61, N. Y., Lab. Asst., New York City Dept. of Health

S. Milton Rabson, M.D., 730 W. Berry St., Fort Wayne 2, Ind., Lab. Director, St. Joseph Hospital

Mary Alla Monroe, 704 N. President, Jackson, Miss., Microbiologist, Div. of Labs., State Board of Health

Kenneth W. Riley 618 Walnut St., Grand Forks, N. D., City Chemist, Grand Forks Water and Sewage Dept.

Emile A. Rizk, M.D., P. O. Box 349, Beirut, Lebanon, Syria, Director, Antirabic Institute, French School of Medicine

Dr. Ramon C. Ruiz-Nazario, P. O. Box 2822, San Juan 12, P. R., Director of Lab., University Hospital

Leslie S. Sharpe, 1339 Pacific St., Brooklyn 16, N. Y., Bacteriological Lab., Asst., Dept. of Health

Carlos Sole-Vernin, M.D., Sao Francisco Xavier, 694, Rio de Janeiro, Brazil, S. A., Lab. Asst., Service Especial de Saude Publica

Helen E. Walsh, Box 222, Anchorage, Alaska, Senior Bacteriologist, Territorial Dept. of Health

*Vital Statistics Section*

John E. Black, 1219 Security Trust Bldg., Indianapolis 4, Ind., Director, Public Relations & Statistical Service, Indiana Tuberculosis Assn.

Martha C. Eaton, 2605 Haste St., Berkeley 4, Calif., Medical Statistician, Permanente Foundation Hospital

*Engineering Section*

Robert R. Ackley, 15 Exchange Pl., Jersey City, N. J., Director, Industrial Div., Onyx Oil & Chemical Co.

Pastor S. Echavez, 1482 Economia St., Manila, Philippine Islands, Sanitary Engineer and Acting Chief, Section of Sanitary Engineering, Bureau of Health

John C. Flake, Ph.D., State Board of Health, Civil Courts Bldg., New Orleans 7, La., Acting Director, Div. of Milk and Dairy Products

Gerald A. Fleet, M.C.E., 112 E. 19 St., New York 3, N. Y., Engineer, Buck, Seifert and Jost (Consulting Engineers)

Clarence E. Gabriel, 3228 E. 4 St., Tulsa, Okla., Sanitary Inspector, City Health Dept.

Mohan Issardas Gurbaxani, 615 N. Wolfe St., Baltimore, Md., Student, Johns Hopkins School of Hygiene and Public Health

Frank E. Haight, 7806 Jeannette St., New Orleans, La., Engineering Aide, State Board of Health

Horace G. Hesse, Fayetteville, W. Va., Sanitarian, Fayette County Health Dept.

Chung-yuan Li, 107 Cook St., Ithaca, N. Y., Student, Cornell Univ.

Adolphus L. Lively, Box 20, Bluefield, W. Va., Sanitarian, Div. of Sanitary Engineering, State Health Dept.

Linden J. Murphy, M.S., McCormick Bldg., Room 755, 332 S. Michigan, Chicago 4, Ill., Senior Sanitary Engineer, U. S. Public Health Service

*Industrial Hygiene Section*

Edward R. Aston, D.D.S., 214 Commonwealth Bldg., Harrisburg, Pa., Dental Consultant, State Dept. of Health

Francis C. Black, 915 Clinton Ave., Oak Park, Ill., Engineer-Supervisor, Hartford Accident & Indemnity Co.

Gladys A. Jahncke, 633 North 12, Seattle 2, Wash., Industrial Advisory Public Health Nurse, State Dept. of Health

*Food and Nutrition Section*

Roland Camirand, M.Sc., Dept. of Agriculture, Quebec, Can., General Inspector of Dairy Products

Clifford F. Evers, 20 Beech Terr., Millburn, N. J., Director of Research, General Foods Corp.

Bernes Larson, 507 Carondelet St., New Orleans, La., Consultant on Nutrition, City Health Dept.

E. M. Yvonne Love, Provincial Board of Health, Parliament Bldgs., Victoria, B. C., Can., Consultant in Nutrition

John F. McNamara, 909 S.E. Miami Rd., Miami, Fla., Sanitarian, Dade County Health Dept.

Everett W. Wooster, City Hall, Salina, Kan., Director, Food and Sanitation and Milk Inspection, City Health Dept.

*Maternal and Child Health Section*

Edward M. Ditolla, M.D., 445 W. 23 St., New York 11, N. Y., Supervisor, Child Hygiene, New York City Dept. of Health

Paul V. Lemkau, M.D., 615 N. Wolfe St., Baltimore 5, Md., Assoc. Prof. of Mental Hygiene, School of Hygiene and Public Health, Johns Hopkins Univ.

Elk Tannenbaum, M.D., 168 W. 86 St., New York 24, N. Y., Supervising Physician, New York City Dept. of Health

Kent A. Zimmerman, M.D., Children's

Bureau, Dept. of Labor, Washington 25, D. C., Director, Mental Health Unit

*Public Health Education Section*

Mabel I. T. Abbott, M.S.P.H., R.N., 129 East St., County Health Dept., Wadsworth, O., County Public Health Nurse

William W. Bolton, M.D., 535 N. Dearborn St., Chicago 10, Ill., Asst. Director, Bureau of Health Education, American Medical Assn.

J. F. Marvin, Buechel, M.Sc., Everett Junior College, Everett, Wash., Dean

Mercedes Cedo, M.S.P.H., 21 Munoz Rivera, Mayaguez, P. R., Senior Health Educator, Public Health Unit

Grace E. Dorsey, M.A., 2238 5 Ave., New York, N. Y., Health Education Secy., N. Y. Tuberculosis and Health Assn.

Alice L. Fajans, Grand Central Ave., Box 197, Amityville, N. Y., Exec. Secy., Suffolk County Cancer Committee

Mary Fitzgerald, 326 Appleton St., Holyoke, Mass., Exec. Secy., Holyoke Tuberculosis Assn.

Frances Kornegay, M.S.P.H., 413 Breazeale Ave., Mt. Olive, N. C., School Health Coordinator, Wayne County Health Dept.

Louis E. Kulcinski, Ph.D., 927 Lantana Dr., Kinsville, Tex., Head, Health & Physical Education, Texas College of Arts and Industry

Margaret L. Leonard, Ed.D., U. S. Public Health Service, Washington, D. C., Health Education Consultant

Catalina Lube, M.P.H., Dept. of Health, Office of Health Education, San Juan, P. R., Health Education Supervisor

Virginia L. Potts, M.S.P.H., 301 S. Union, Concord, N. C., Health Educator, Cabarrus County Health Dept.

Morton A. Seidenfeld, Ph.D., 120 Broadway, N.F.I.P., New York 20, N. Y., Director of Psychological Services, National Foundation for Infantile Paraysis

Robert C. Thomas, D.O., Box 210, Verdin, N. M.

Marjorie A. C. Young, M.Ed., 310 Cedar St., Yale School of Public Health, New Haven, Conn., Student

*Public Health Nursing Section*

Jeanie L. Adkerson, 2019 Eye St., N.W., Apt. 808, Washington 6, D. C., Consultant in Disaster Nursing, American Red Cross, Eastern Area

Lucille C. Becker, 3792a Lee Ave., St. Louis 7, Mo., Public Health Nursing Consultant, Missouri Rheumatic Fever Program, State Service for Crippled Children

Wilda Camery, M.A., 10 Mitchell Pl., New York 17, N. Y., Supervisor of District Office, Community Service Society

Mary R. Cook, R.N., Selby, S. D., County Public Health Nurse, State Board of Health

Elizabeth Earle, M.S., 1800 N. Edison St., Arlington, Va., Director, Bureau of Nursing, Arlington County Health Dept.

Gertrude Gardiner, 234 Rosedale Dr., El Paso, Tex., Exec. Secy., El Paso Tuberculosis Assn.

Mabel V. Hawkins, R.N., 407 W. Franklin St., Baltimore 1, Md., Visiting Nurse, Mutual Benefit Society

Julia Hereford, M.A., Mary Kirkland Hall, Nashville, Tenn., Teacher, School of Nursing, Vanderbilt Univ.

Edith S. Kivett, 74 Godwin Ave., Ridgewood, N. J., Supervisor, Red Cross Nursing Service

Aileen L. Losey, R.N., 234 Martine Ave., White Plains, N. Y., Supervising Public Health Nurse, Westchester County Dept. of Health

Lillian K. Meade, M.A., 69 Main St., Tuckahoe 7, N. Y., Director, Public Health Nursing Organization of Eastchester, Inc.

Eleanore C. Moomau, Petersburg W. Va., Grant County Public Health Nurse

Helen M. Murphy, 1301 Ninth Ave., Helena, Mont., Supervisor, Public Health Nursing, State Board of Health

Elizabeth P. Olson, R.N., 395½ S. Floral Ave., Bartow, Fla., Supervisor of Nurses, Polk County Health Dept.

Loretta C. Parsons, R.N., City Health Dept., Portsmouth, Va., Asst. Nurse Officer, U. S. Public Health Service

Erma M. Rawson, R.N., 1970 Windsor St., Salt Lake City, Utah, Nursing Supervisor, Salt Lake County Board of Health

M. Grace Ross, R.N., 60 Eighth St., New Bedford, Mass., Director, Instructive Nursing Assn.

Elizabeth K. Scofield, Barry County Health Dept., Hastings, Mich., Staff Nurse

Myrtle Sorenson, 7367 N. Ashland Blvd., Chicago 26, Ill., Public Health Nursing Supervisor, Cook County Health Dept.

Jean E. Sutherland, M.A., 37-06 81 St., Jackson Heights, N. Y., Consultant, Nurse Counseling and Placement Office, U. S. Employment Service

Frances E. Taylor, 2119 Huidekoper Place, N.W., Washington 7, D. C., Public Health Nursing Consultant, Employees' Health Service, U. S. Public Health Service

Olivia J. Todd, R.N., 729 Irma St., Orlando, Fla., Supervising Nurse, Orange County Health Dept.

*Epidemiology Section*

Hilario Lara, Dr.P.H., 66 Mabolo St., Pasay, Rizal, Philippines, Director and Prof. of Epidemiology, Institute of Hygiene

Joseph A. Moore, M.D., Univ. of Mich. School of Public Health, Ann Arbor, Mich., Student

Don M. Rees, Ph.D., University of Utah, Biology Dept., Salt Lake City, Utah, Prof. of Zoology and Entomology

Clayton M. Steward, M.D., 46 Elm St., Glens Falls, N. Y., Apprentice Epidemiologist, State Dept. of Health

John M. Weir, M.D., 49 W. 49 St., New York 20, N. Y., Field Staff, International Health Div., Rockefeller Foundation

*School Health Section*

Rosallia Kurz, M.A., 2174 Strathmoor Blvd., Louisville, Ky., Asst. Supervisor of Health and Physical Education, Louisville Public Schools

Helen Manley, M.A., 6701 Delmar, University City, Mo., Director, Health and Physical Education, University City Schools

Esther C. Potts, 2023 Fifth Ave., San Rafael, Calif., School Nurse, Marin County Board of Education

Ethel E. Tobin, 301 Hall of Records, Fresno 1, Calif., Health Coördinator, Fresno County Schools

*Dental Health Section*

Cyril L. Friend, D.D.S., M.P.H., State Board of Health, Jefferson City, Mo., Senior Public Health Dentist

*Unaffiliated*

Burnet M. Davis, M.D., 790 Clemont Drive, N. E., Atlanta, Ga., Surgeon, U.S.P.H.S., assigned to Labor Branch, USDA, as Field Medical Officer, Southeastern Division

Frederick Fink, M.D., Franklin Life Insurance Co., Springfield, Ill., Medical Director

Sister Teresa Kelly, Sisters of Charity, Carville, La., Chief Nurse, U. S. Marine Hospital

DECEASED MEMBERS

Robert C. Farrier, M.D., East St. Louis, Ill., Elected Member 1929, Elected Fellow 1942, Health Officers Section

John Grill, M.D., Milwaukee, Wis., Elected Member 1935, Laboratory Section

Don W. Gudakunst, M.D., Dr.P.H., Westport, Conn., Elected Member 1921, Elected Fellow 1927, Maternal and Child Health Section

Sumner M. Miller, M.D., Peoria, Ill., Elected Member 1935, Elected Fellow 1942, Health Officers Section

Arthur L. Murray, M.D., Washington, D. C., Elected Member 1920, Unaffiliated

Mazÿck P. Ravenel, M.D., Columbia, Mo., Elected Member 1897, Charter Fellow, Laboratory Section

## NEW A.P.H.A. ACTIVITIES IN MEDICAL CARE

Implementing "Medical Care in a National Health Program," an Official Statement of the American Public Health Association adopted in October, 1944, the Committee on Administrative Practice announces the expansion of its Subcommittee on Medical Care and new plans for continuation of this important program.

A grant from the Rockefeller Foundation now makes possible the employment of a much needed full-time staff for the work of this committee. Howard M. Kline, Ph.D., of the Procurement and Assignment Service, Federal Security Agency, and the staff of the U. S. Public Health Service, has accepted the position of Technical Secretary, and other staff persons are being assembled to carry on a project which has four major aims:

a. To formulate in considerable detail the specifications of a suitable medical care program, and to set forth with definitiveness the successive steps by which such a program should be brought into being, and further to formulate detailed proposals for the organization, financing, and administration of a program;

b. concurrent with (a) to evaluate the experience of existing medical care programs, thus laying the basis of factual knowledge necessary for solution of the problem;

c. To review proposed federal and state health legislation in the light of declared principles and to recommend

to the Association a stand with respect to such legislation;

d. To aid in informing public health personnel as to medical care problems and to stimulate the assumption of leadership in the formulation and administration of medical care programs.

For the purposes of this expanded program, the Subcommittee on Medical Care has been enlarged. Its membership now includes:

Joseph W. Mountin, M.D., *Chairman*
Chief, States Relation Division
U. S. Public Health Service

Dean A. Clark, M.D.
Medical Director
Health Insurance Plan of Greater New York

Edwin F. Daily, M.D.
Director, Division of Health Services
U. S. Children's Bureau

Isidore S. Falk, Ph.D.
Director, Bureau of Research and Statistics
Social Security Board

Vlado A. Getting, M.D.
Massachusetts State Commissioner of Public Health

J. Roy Hege, M.D.
Director, Division of Local Health Administration
North Carolina State Board of Health

Basil MacLean, M.D.
Superintendent, Strong Memorial Hospital, Rochester, N. Y.

Hugh Morgan, M.D.
Professor of Medicine
Vanderbilt University School of Medicine

George St. John Perrott
Chief, Division of Public Health Methods
U. S. Public Health Service

Marian G. Randall, R.N.
Executive Director
Visiting Nurse Service of New York

Dean Roberts, M.D.
Chief, Bureau of Child Hygiene
Maryland State Health Department

Edward S. Rogers, M.D.
Assistant Commissioner
New York State Department of Health

Nathan Sinai, Dr.P.H.
Professor of Public Health
University of Michigan

R. M. Walls, D.D.S.
Dental Practice, Bethlehem, Pa.

John B. Grant, M.D., Consultant
Rockefeller Foundation

Hugh R. Leavell, M.D., Consultant
Rockefeller Foundation

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# EMPLOYMENT SERVICE

The Association Employment Service seeks to bring to the attention of appointing Officers the names of qualified public health personnel and to act as a clearinghouse on employment. This is a service of the Association conducted without expense to the employer or employee.

From the registry of persons available, selected announcements are published from time to time. Appointing officers may obtain lists of all registrants on request.

Address all correspondence to the Employment Service, American Public Health Association, 1790 Broadway, New York 19, N. Y.

### Vacant Positions Listed with the Association's Vocational Counseling and Placement Service

As this issue of the Journal went to press, the Vocational Counseling and Placement Service of the American Public Health Association, 1790 Broadway, New York City, had listed 96 positions for physicians in public health in administration, epidemiology and in the clinical field. Nine positions were offered to non-medical administrators, 2 to public health dentists, 27 to health educators, 10 to laboratory workers, 12 to sanitary engineers, 1 to an industrial engineer, 12 to sanitarians, 4 to statisticians, 1 for a nutritionist and 5 for medical social workers. A total of 180 positions offered by 86 employers were currently listed. One hundred and twenty-five applicants in all categories were in the record. This represents a substantial increase from the figures of one month previous. Only a part of these openings are covered in listings on the employment page of the *American Journal of Public Health*. Employers and candidates interested should communicate with the Vocational Counseling and Placement Service at the above address.

As previously announced, this service is rendered without charge by the Association, which is assisted for this purpose by the U. S. Public Health Service in a jointly sponsored project carried on under the auspices of the Committee on Professional Education, of which William P. Shepard, M.D., of San Francisco, is Chairman. It is the aim of this service to place at the disposal of all persons now seeking positions in public health the counsel of those well informed in the field, with a special effort to assist veterans. Public health nursing positions are not listed by the A.P.H.A. but inquiries are forwarded to the N.O.P.H.N. and other nurse placement agencies.

### Positions Available

(Supplemental to list in February Journal)

**Wanted:** Physician trained in tuberculosis to assume permanent control of Tuberculosis Division of Health Department of Eastern city of 185,000. Applicant please state salary expected. Apply **Box H**, A.P.H.A.

**Wanted:** In City of Hartford, Conn., physician trained in venereal diseases to assume permanent administrative control of Venereal Diseases Division of the Health Department. Applicant please state salary expected. Apply Dept. of Health, Hartford, Conn.

**Wanted:** Executive Secretary for Hawaii Territorial Society for Mental Hygiene. New position. Salary $350 month, advancement dependent on growth of Society and its work. Duties to guide, stimulate, and promote development of integrated program for the Society, now 3 years old. Major activities, education, coördination, publicity. Requirements, training and experience in psychiatric social work with demonstrated ability in public relations preferred. Will also consider candidates with training and successful experience in community organization. Selection to be made on basis of unassembled examination, including submission of short thesis on pertinent subject. For particulars write to the Society, clipper mail, attention Miss Vivian Johnson, Mabel Smythe Bldg., Honolulu, T. H.

**Physical Therapy Technician** for New Hampshire Department of Public Health. Apply to Merit System Council, State House, Concord, N. H.

**Wanted:** Director, State-wide Hospital Survey. Survey of hospital facili-

ties in Maryland planned under special committee of State Planning Commission. Applicant must have experience in hospital administration and community organization. Salary $5,000 plus travel expense. Apply J. D. Colman, Director, Associated Hospital Service of Baltimore, Inc., 506 Park Ave., Baltimore 1, Md.

Wanted: Medical Director. New prepayment medical care program under joint sponsorship of State Medical Society and Blue Cross needs full-time medical director. Starting salary $6,000 per annum. Apply J. D. Colman, Director, Associated Hospital Service of Baltimore, Inc., 506 Park Ave., Baltimore 1, Md.

**Tennessee Department of Public Health** announces vacancies for public health officers, sanitary engineers, chemical engineers in stream pollution control and industrial hygiene work, and for public health nurses. Salary dependent on training and experience. Apply State Department of Health, Nashville 3, Tenn.

**Commercial opening for health man.** Large specialty manufacturing organization with nation-wide sales force and a number of public relations men who call on health officers. If you have public health background and feel you might like to get into commercial life this opportunity may appeal. Ability to deal with people important. Also ability to write and speak before P.T.A. groups, etc. Travel necessary. Write fully in confidence giving complete background, education, compensation. **Box L,** Employment Service, A.P.H.A.

**Industrial Hygiene Engineer** position available with Oregon State Board of Health, Portland, Ore. $300–$375 per month. Requires B.A. in Chemical Engineering, 2 years as industrial hygiene engineer in government agency, 1 year graduate work in chemical engineering or industrial hygiene (2 years' engineering experience may be substituted for 1 year graduate work). Unassembled examination. Write Merit System Council, 616 Mead Bldg., Portland 4, Ore.

Wanted: Public Health Nurses for generalized nursing program. Salary range $210 to $240 per month. Under Civil Service, 40 hour week, vacation and sick leave privileges. Address Director of Public Health Nursing, City of Seattle, 504 County City Bldg., Seattle 4, Wash.

Wanted: Full-time dentist interested and qualified in preventive, public health, and children's dentistry. Position established by Marin Co. Health Dept. Salary $4,800 plus travel expense. Dental trailer with complete equipment furnished. Public health experience and training desirable. Must be licensed in California. Apply Irving D. Johnson, M.D., Marin Co. Health Officer, 704 4th St., San Rafael, Calif., stating personal data, educational background and experience.

**Wanted:** Executive Director for public health generalized service, with college degree and experience in public health nursing. Agency is in suburban Philadelphia. **Box P,** Employment Service, A.P.H.A.

**Wanted:** Physician qualified to assume position as Director of Maternal and Child Health and Crippled Children Division. Minimum requirements include public health training and experience and training in pediatrics. Salary $325 to $350. Under Merit System. Address State Board of Health, Capitol Building, Cheyenne, Wyoming.

**Wanted:** Physician qualified to assume position as Director of Division of Communicable Disease Control. Special attention given to tuberculosis. Salary $325 to $350. Under Merit System. Address State Board of Health, Capitol Building, Cheyenne, Wyoming.

**Research Fellowship** in Sanitary Engineering available to graduate engineer with special training in chemistry and bacteriology. $1,000 per annum with two-thirds residence time credited toward M.S. degree. Address, Director, Engineering and Industrial Experiment Station, University of Florida, Gainesville, Fla.

**Wanted:** Qualified public health physicians and public health nurses in Texas. Applicants should have specialized training or experience in public health work. George W. Cox, M.D., State Health Officer, Austin, Texas.

**Bacteriologist** wanted for technical service and field development work in food industries and related fields. Should have B.S. in bacteriology and minor in chemistry or biochemistry. Age 26–32. Location Middle West. Write fully. **Box D,** Employment Service, A.P.H.A.

**Wanted:** Health Educator. Entrance salary $3,758, top salary $4,298 per annum; Epidemiologist and Registrar of Vital Statistics, M.D., with experience in epidemiology, entrance salary $4,500, top salary $5,000 plus, per annum; **Staff Physician** for health districts, qualification M.D., entrance salary $3,158, top salary $3,879 per annum. Apply Commissioner of Health, City Hall, Cincinnati 2, Ohio.

**Physician Wanted:** Man or woman

with general clinical experience and public health background for Alaska Marine Health Unit. Services include TB case finding, x-rays, physical examinations, immunizations, well baby conferences, pre- and post-natal examinations, VD control and allied public health procedures. Vessel is 115', well appointed, comfortable, accommodating physician, nurse, laboratory technician, secretary, dental hygienist and crew. Position offers opportunity for travel and service to communities along Alaska's scenic coastline. Communicate with Territorial Dept. of Health, Box 1931, Juneau, Alaska.

**Wanted:** Registered Nurses, college degree, public health certificate. Five day week, travel position, $220 per month full maintenance in field. Apply American National Red Cross Pacific Area, Nursing Service, Civic Auditorium, San Francisco, Calif.

### Announcement of Scholarships in Nutrition

Four scholarships available, through North Carolina State Board of Health, at University of Tennessee, Knoxville, for year 1946. Applicants can enter in March or June. Scholarships will provide stipend of $100 a month for 12 months plus tuition fees and travel while in training. Training period will be for 12 months and will include 9 months' formal training and 3 months' supervised field work. Eligibility requirements: (a) Age between 23 and 35 years; (b) Bachelor's degree in foods and nutrition, chemistry or biological sciences from a recognized institution; (c) teaching, hospital dietetics, nutrition research or other related subjects for a period of at least 2 years. Upon successful completion of training at University of Tennessee, candidates will be employed as nutritionists by North Carolina State Board of Health. Salary scale for nutritionists is $1,800 to $3,000 with additional travel allowance of $1,200 a year. Interested applicants should send transcript of their college record and statement of experience since graduation to Director of Nutrition Division, State Board of Health, Raleigh, N. C.

### New Mexico Merit System Council Announces Unassembled Examinations for:

| | |
|---|---|
| Director of Maternal and Child Health | $400–$500 |
| Tuberculosis Control Officer | 375– 475 |
| Venereal Disease Clinician | 300– 400 |
| Director of Public Health Nursing | 275– 325 |
| Maternal Child Health Consultant Nurse | 225– 275 |
| Public Health Nursing Consultant | 215– 265 |
| Public Health Nurse-Midwife Consultant | 215– 265 |
| Public Health Nurse Supervisor | 200– 250 |
| Public Health Nurse Midwife | 200– 250 |
| Public Health Nurse | 175– 215 |
| Staff Nurse | 145– 165 |
| Emergency War Nurse | 150– 170 |
| Clinic Graduate Nurse | 135– 155 |

State residence not required for appointment. Closing date for filing applications March 23, 1946. Application forms and full information may be obtained from Merit System Council, Post Office Box 939, Santa Fe, N. M.

### Announcement of Examination for Appointment of Sanitary Engineers to the United States Public Health Service

An examination for appointment as Assistant Sanitary Engineer and Senior Assistant Sanitary Engineer in the Regular Commissioned Corps of the United States Public Health Service is scheduled to be held at

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|---|---|
| Washington, D. C.—USPHS Dispensary, Fourth and D Streets, S.W. | April 15<br>June 3 |
| New York New York—Stapleton, Staten Island—Marine Hospital | April 17 |
| Cincinnati, Ohio—USPHS Water & Sanitation Investigation Station, East Third and Kilgour Streets | April 19 |
| Atlanta, Georgia—Malaria Control in War Areas, 605 Volunteer Bldg. | May 15 |
| New Orleans, Louisiana—Marine Hospital, 210 State Street | May 17 |
| Los Angeles, California—USPHS Relief Station, 406 Federal Bldg. | May 21 |
| San Francisco, California—Marine Hospital, 14th Ave. and Park Blvd. | May 23 |
| Seattle, Washington—Marine Hospital, Judkins St. and 14th Ave. South | May 27 |
| Denver, Colorado—USPHS District Office, 617 Colorado Building | May 29 |
| Chicago, Illinois—Marine Hospital, 4141 Clarendon Avenue | May 31 |

The oral professional, academic, and physical examinations will be held at 9 A.M. at places and dates given above. The final written portion of the examination will be given simultaneously at the above locations beginning on June 5, 1946, and ending on June 7, 1946. The written portion of the examination may be given at certain other stations of the Service where two or more regular commissioned officers are on duty, if request is made by an applicant. Minimum age—21.

Education and Training: (1) Assistant, at least 7 years of educational (exclusive of high school) and professional training or experience and a degree in engineering (sanitary engineering course); (2) Senior Assistant, as above plus 4 additional years of post-graduate professional training or experience.

Compensation (including allowance for quarters and subsistence): (1) Assistant, $3,411.00 with, and $2,975.50 without dependents; (2) Senior Assistant $3,991.00 with, and $3,555.50 without dependents.

Applicants should address a letter to the Surgeon General, U. S. Public Health Service, Washington, D. C., at the earliest practicable date, requesting application blanks. Such letter should include a brief biographical statement relative to professional school or college attended, type of studies pursued, degrees granted and subsequent training or experience. Applicants of foreign birth must furnish proof of United States citizenship.

Transportation expenses to and from and cost of maintenance at place of examination must be assumed by the candidate.

## POSITIONS WANTED

**Bacteriologist,** woman, B.S. 1941, 4½ years' laboratory experience, hospital and public health, seeks position in or near New York City. Prefer desk position such as technical literature research, abstracting, etc. Also interested in laboratory work. **L-481**

**Bacteriologist:** M.A., Johns Hopkins, seeks position in medical college or state public health laboratory. Broad experience. **L-482**

**Chemist,** experienced in food, drug and insecticide analysis, seeks laboratory position. **L-483**

**Pathologist,** Board Diplomate, competent and experienced in pathologic anatomy, clinical pathology, bacteriology and tropical medicine; years of public health experience as laboratory director and research associate, consultant, professor and executive; numerous publications, excellent references. Age 40. L-472

**Serologist-Bacteriologist,** Ph.D., D.V.M., 16 years' experience in public health and hospital work, 3 years in charge Army hospital laboratory. Desires Directorship with opportunity for research. L-426

**Bacteriologist** with service experience in food bacteriology, enteric group studies, respiratory diseases, malaria and epidemiological problems, seeks position in New England or midwest. **L-485**

Public **Health Administrator,** B.A., M.S.P.H., recently released after 4 years' service as hospital adjutant and assistant medical inspector, seeks position as administrator or health educator. Experienced in teaching field. Organizing ability. References. **A-517**

**Health Educator,** Woman, Negro, trained in public health, community organization, adult education, workers education and related fields and experienced as teacher, seeks position with voluntary or official agency or as teacher. **H-518**

**Sanitary Engineer,** 5½ years' operational experience city sewage plant, nearly 4 years Captain in Sanitary Corps, U. S. Army, seeks position as sanitary engineer in Eastern U. S. **E-488**

**Sanitary Engineer** seeks position in southern or western states. Experienced in food, milk and general sanitation. **E-489**

**Statistician and registrar** of vital statistics for past four years in large city wishes to make a change. **S-461**

**Veterinarian** with 3 years' experience in army meat and milk inspection seeks position with city or state health department. Well qualified in animal disease control. **M-461**

**Graduate veterinarian,** age 30, V.M.D. University of Pennsylvania, seeks position with city or state health department. Over 3 years' experience in army meat and dairy inspection including plant sanitary inspection. Over 6 years' experience in animal diseases and veterinary pathology. **M-462**

**Veterinarian,** recently released from U. S. Public Health Service, formerly in practice, seeks part time or full time position with city, state or county health department in State of Virginia or Illinois. **M-463**

*Advertisement*

# Opportunities Available

WANTED—(a) Director of division of maternal and child health and, also, epidemiologist and director of division of preventable disease control; former position requires general public health training and some experience in maternal and child health work; latter position requires experience and training in epidemiology especially venereal disease control; well organized city health department; seven divisions; staff of 54 employees; Middle West. (b) Director of division of tuberculosis control; state department of health; tuberculosis specialist with administrative experience required; duties include serving as consultant of several sanatoria and, also, building of five tuberculosis hospitals; South. (c) Director of crippled children's program; pediatrician with public health experience or training preferred; department responsible for providing medical and surgical care of approximately 5,000 children; well staffed department, rapidly growing; permanent headquarters in university medical center; Middle West. (d) Student health physician; enrollment of 5,000 students; more than 400 on faculty; well equipped department; Pacific Coast. (e) Public health physician to serve as county health officer; duties consist of supervising school immunizations, epidemiology, venereal disease clinics and well baby conferences; well staffed department; California. (f) Public health physician to direct program for cancer control; preferably someone experienced or particularly well trained in cancerology; should be capable public speaker and able to qualify for teaching appointment on faculty of university medical school. **PH3-1** The Medical Bureau, Burneice Larson, Director, Palmolive Building, Chicago 11.

WANTED—(a) Public health nurse with extensive training and experience to accept interesting assignment in Central and South America; though knowledge of Spanish or Portuguese desirable, will consider someone willing to learn either language. (b) Supervisor and staff nurses; visiting nurses' association; supervisory position requires year's graduate training in public health nursing and experience under qualified supervision; New England. (c) Executive director; one of the leading agencies for generalized nursing located in suburb of Eastern city; immediately. (d) Director, supervisors and staff nurses to join staff of national health association; considerable traveling; salaries for staff positions dependent upon qualifications but not less than $2,100; salary for supervisors $2,980 plus $6 a day when away from headquarters; salary for director dependent upon qualifications; headquarters in Middle West and Southwest. (e) Public health nurse for executive position in high school and junior high school; vicinity of Chicago. (f) Instructor and supervisor of public health and out patient nursing; large teaching hospital, outpatient department used for instruction of medical students; active teaching and research program; baccalaureate degree and public health preparation required; $225. **PH3-2** The Medical Bureau, Burneice Larson, Director, Palmolive Building, Chicago 11.

WANTED—Sanitarian to direct plant and production; sanitation program of one of the country's most important food industries; must be soundly grounded in fundamentals necessary to well rounded sanitary program for food industry; capable public speaker required. **PH3-3** The Medical Bureau, Burneice Larson, Director, Palmolive Building, Chicago 11.

WANTED—(a) Health educator; new public health program, emphasizing venereal diseases and social hygiene; previous experience in conducting health education program required; $3,600–$4,800; Southwestern city of 200,000. (b) Health educator; tuberculosis association and city health department; East. (c) Health educator; city-county health department; college town of 60,000; Middle West. (d) Assistant educational director; Chicago offices of national organization; $3,000. **PH3-4** The Medical Bureau, Burneice Larson, Director, Palmolive Building, Chicago 11.

WANTED—(a) Several bacteriologists and serologists for public health laboratories; state department of health; rank and salaries dependent upon experience in public health laboratories; South. (b) Senior and junior bacteriologists; state department of health; senior position requires tuberculosis experience; Middle West. **PH3-5** The Medical Bureau, Burneice Larson, Director, Palmolive Building, Chicago 11.

*Advertisement*

# Opportunities Wanted

Young physician with intimate knowledge of all aspects of industrial hygiene and medicine is available; past several years, director of department of industrial hygiene, state department of health; for further information, please write Burneice Larson, Director, Medical Bureau, Palmolive Building, Chicago 11.

Public health physician; degrees of Doctor of Medicine and Master of Public Health from Middle Western university; has been in full-time health department work since 1939 where his duties have been principally in administrative capacity; age forty-four; will go anywhere; for further information, please write Burneice Larson, Director, Medical Bureau, Palmolive Building, Chicago 11.

Dentist who has specialized in public health; D.D.S., university medical school; several years' private practice; year of postgraduate training in public health hygiene with special emphasis on public health dentistry for which he received degree of M.S.P.H.; several years, state department of health; for further information, please write Burneice Larson, Director, Medical Bureau, Palmolive Building, Chicago 11.

Health educator; A.B., M.S. degrees, middle western university; experience largely administrative including eight years as associate professor of medicine, co-educational college; for further information, please write Burneice Larson, Director, Medical Bureau, Palmolive Building, Chicago 11.

# NEWS FROM THE FIELD

## THE PLAN OF DISTRIBUTION BY THE AMERICAN RED CROSS OF THE DRIED BLOOD PLASMA DECLARED SURPLUS BY THE ARMED FORCES

During the war, large quantities of blood were given by the American people through the American Red Cross from which dried plasma was prepared for the armed forces. The supply of this material was predicated upon the needs of the Army and the Navy for a long and costly war. Because of an earlier cessation of hostilities than was reasonably to be expected in both the European and Pacific Theaters, there is now in the hands of the Army and the Navy a quantity of dried plasma which is in excess of their needs during the anticipated useful life of the plasma, namely, 5 years from the date of processing. Accordingly to Army and Navy estimates, the available surplus amounted to approximately one and a quarter million packages at the end of December.

The transfer to the American Red Cross of dried plasma declared surplus by the Army and the Navy is provided for by Public Law 457 of the 78th Congress, approved October 3, 1944. The pertinent portion of this law, Section 11 (f), reads as follows:

> "No surplus property which was processed, produced, or donated by the American Red Cross for any government agency shall be disposed of except after notice to and consultation with the American Red Cross. All or any portion of such property may be donated to the American Red Cross, upon its request, solely for charitable purposes."

Under the foregoing provision of Congress, a formal request was made to the Army and the Navy that all surplus plasma be transferred to the American Red Cross. This action was taken on the ground that the American Red Cross has a responsibility to the American people to assure that plasma and other derivatives of the blood voluntarily contributed for the members of the armed forces be utilized to the best advantage and not wasted or offered for sale or barter. In making this request, it was proposed that any surplus should be returned to the American people, who had made these supplies of plasma possible, for use in veterans hospitals and in civilian medical practice. This proposal was accepted by the Army and the Navy and accordingly they will transfer to the American Red Cross all available surplus stores of plasma and other blood derivatives.

In developing a plan for the distribution of this material it was felt that the first consideration was that the needs of the Veterans Administration be met. This was discussed with General Hawley, and it was arranged to provide him with the amount of plasma estimated will be required for use in Veterans Administration facilities during the next five years.

In planning for distribution and use in civilian medical practice there were three factors believed to be of particular importance. The distribution should be carried on in such a manner as first, to assist in making possible an accurate determination of the needs for blood and blood derivatives in the various parts of the country; second, to strengthen and stimulate the development of already established state and local civilian blood and blood derivatives programs; and third, to demonstrate the value of such programs and thus stimulate their establishment where they do not already exist.

The surplus dried plasma amounts to about one and a quarter million

packages, which it is estimated will meet civilian needs for approximately two years. Warehouse storage space is provided in each of the five Red Cross areas, the headquarters of which are located at New York City, Alexandria, Va., Atlanta, Ga., St. Louis, Mo., and San Francisco, Calif. The available plasma will be apportioned to each of these areas on a population basis, and supplied to state departments of health for distribution without charge to all physicians licensed to practise medicine, and to all acceptable hospitals for use in the treatment of any patient without charge for the product. This plan is similar to that which the state departments of health have been following in distributing the surplus immune serum globulin made available by the American Red Cross for the prophylaxis and modification of measles.

The area medical directors of the American Red Cross will make arrangements with state departments of health for a satisfactory plan for the distribution of plasma within each state, in consultation with representatives of the state medical society and state hospital association. The American Red Cross will then make an initial shipment to the health department in an amount estimated to be a 3 months' supply. This estimate will be based on the population of the state, weighted by the number of physicians and the number of general, pediatric, and maternity hospital beds. Thus, every physician may, if he desires, carry plasma with him, and hospitals may be stocked with a reasonable supply for the treatment of their patients. Replacements of plasma may be obtained on request by physicians or hospitals from the state department of health, or through the local Red Cross chapter, if the department of health does not have a local distribution center. State departments of health in turn will obtain replacements of plasma up to a 6 months' supply by requesting it from the area office of the American Red Cross.

### LOCAL HEALTH UNITS IN ILLINOIS INCREASE

The January, 1946, *Illinois Health Messenger* of the Illinois Department of Health reports that 14 counties have organized locally managed and financed county health departments since the passage of the permissive Searcy-Clabaugh health unit law in 1943. The 14 counties are served in 11 units, nine of one county, and one each of two and three counties.

In several instances where the populations are less than 40,000, a neighboring county may later join the unit, in accordance with the recommendations of the State Health Officer and the A.P.H.A. Committee on Local Health Units, as contained in *Local Health Units for the Nation*, recently published by the Commonwealth Fund.

### INDUSTRIAL HYGIENE NEWS ROUND THE GLOBE

The JOURNAL is indebted to the November and December *Industrial Hygiene News Letter* for the following items selected from many of interest:

"British and Brazilian Industrial Hygienists Study U. S. Methods—Reflecting the growing interest in industrial health within their nation, Drs. R. S. F. Schilling and Donald Hunter of the British Medical Research Council, and Dr. George S. Bandeira de Melo of Brazil are at present in the United States studying American industrial hygiene practices.

"Yale to Teach Industrial Medicine—Plans for the establishment of a training institute of occupational medicine and hygiene have been announced by the Yale University School of Medicine. Undergraduate medical students will be trained in the basic approaches to occupational medicine throughout all four years of their

course. The curriculum will include instruction in sanitation, toxicology, traumatic surgery, shock treatment, rehabilitation methods, occupational diseases and their treatment, problems of ventilation, industrial medical administration, and other subjects.

"Graduate instruction in the Institute will be available to physicians working in industry, and further training will be open to industrial nurses. The Institute will carry on research in industrial health problems, and give consultative service to industry.

"Children Poisoned by Burning Battery Cases—The latest case of persons suffering lead poisoning as a result of using discarded battery cases for fuel reported to the Industrial Hygiene Division, U. S. Public Health Service, is that of five children in one family who were made seriously ill when battery cases were used to eke out the scanty coal supply in their home.

"Industrial Hygiene in the War-torn Philippines—Dr. Gregorio D. Dizon, Philippine Bureau of Health, writes of his studies in dermatitis due to arsenic poisoning in a large copper mine in the islands—studies interrupted by the late war. He also studied mass benzol poisoning at the Cavite Naval Base during the Japanese occupation, but the records were burned by Japanese after the fall of Manila.

"The loss of his industrial hygiene literature and records, most of them burned, is felt keenly by Dr. Dizon. He appeals to members of the A.I.H.A. to send whatever can be spared to start a new library.

"Polarograph in Oregon—Dr. Harold M. Erickson, Oregon State Health Officer, reports that the Division of Industrial Hygiene has acquired a Heyrovsky Polarograph, the only one of its kind at present on the Pacific Coast. This instrument can be used for determination of minute quantities of toxic mineral contaminants of workroom atmosphere. Local health units and other state departments have been invited to make use of the polarograph as needed.

"Virginia Coal Mines Study Hazards — Environmental exposures and conditions in a Virginia coal mine are being studied by the Bureau of Industrial Hygiene, of the State Department of Health. Preliminary study and a few atmospheric samples indicate a potential high exposure to coke and coal dust, sulfur dioxide, hydrogen or sulfide, and extreme temperature changes. More detailed investigation has been undertaken. Request has been received from another coal company, asking for environmental survey of conditions in their mines."

### THE MAYO PROFESSORSHIP IN PUBLIC HEALTH

The University of Minnesota has announced that its first permanently endowed professorship has been created as the Mayo Professorship in Public Health under an endowment by the Mayo Properties Association. According to the announcement made in Minneapolis, a gift of $150,000 has been received toward the salary of the professorship, which may be supplemented from the income of the Mayo Foundation for Medical Education and Research. Harold S. Diehl, M.D., the Dean of Medical Sciences, pointed out that this professorship is a significant milestone in the development of the University, assuring for the School of Public Health a permanent professorship beyond what the University otherwise could provide.

The University of Minnesota School of Public Health was established about two years ago as an outgrowth from the Department of Preventive Medicine and Public Health in the School of Medicine. Gaylord W. Anderson, M.D., Dr.P.H., has been Professor of Public Health and Director since its

establishment. The Mayo Properties Association was formed by the late Drs. Charles H. and William J. Mayo and their associates to hold and manage assets of the Mayo Clinic. The Mayo Foundation for Medical Education and Research is an educational division of the University of Minnesota on a graduate level. It was first endowed with $2,000,000 in 1917, which sum was subsequently increased by $500,000 in 1934.

### ADVANCED STUDY FOR GRADUATE NURSES

In accordance with instructions of the President and Congress, Dr. Thomas Parran, Surgeon General, U. S. Public Health Service, set October 15, 1945, as the final date on which federal funds would be available to graduate nurses for advanced study. Under terms of the Bolton Nurse Training Act of June, 1943, federal scholarships were provided for graduates, to increase the number of instructors and to prepare more nurses for such important specialized fields as public health and psychiatric nursing. As of October 15, 1945, approximately 15,000 graduate nurses had received federal aid for this purpose. Where these nurses could not be spared from their positions to take postgraduate preparation a series of on-the-job courses was brought to the hospital as an emergency measure to aid nurses who were pressed into positions for which they were not fully prepared. Of the 15,000, about 5,000 were enrolled in these intensive courses.

### LEGION OF MERIT TO LT. COL. MC COY

The U. S. Army has announced the award of the Legion of Merit to Lt. Col. Oliver R. McCoy, Director of the Tropical Disease Control Division, Preventive Medicine Service, Office of the Surgeon General, for fostering activity in the field of malaria treatment and control, in the dissemination of knowledge pertinent to tropical disease control in professional circles and among troops, thus maintaining their health while operating in overseas areas. His " outstanding achievements in bringing into being a means of production of quinine and related antimalarials signify a magnificent contribution to mankind."

### PAN-AMERICAN CONGRESS OF PEDIATRICS

Announcement has been made by Dr. Felix Hurtado of Havana, Cuba, of the plans for the first Pan-American Congress of Pediatrics to be held in New York City in the fall of 1948. The Chairman of the Organization Committee is Dr. J. L. Durand of Seattle, Wash. Dr. Hurtado is Associate Chairman. Latin American members of the committee include:

Dr. F. Gomez, Mexico City, Mexico
Dr. E. Soto, Pradere, Cuba
Dr. C. Kruindick, Lima, Peru
Dr. M. A. Barboza, Rio De Janeiro, Brazil
Dr. C. Umana, Bogota, Colombia
Dr. A. Scroggie, Santiago, Chile
Dr. V. Escardo, Montevideo, Uruguay

According to Dr. Hurtado, the aims of the Congress will be:

1. Consideration of scientific and cultural affairs relating to the diagnosis and treatment of the diseases of children
2. A review of the methods of teaching pediatrics
3. Consideration of newer systems of medical practice in a changing society

### MENTAL HYGIENE PROGRAM IN BERKELEY'S DEPARTMENT OF HEALTH

On an experimental basis the City of Berkeley, Calif. (population, 97,000), has recently developed a city mental hygiene program under the direction of Frank L. Kelly, M.D., Dr.P.H., the City Health Officer. With an initial budget of $11,500, of which $5,000 is a foundation grant, and $4,500 from the State of California, the project will be undertaken for a year, at the end of which time a full report will be made on techniques developed, methods of

financing, and the part to be played by the citizens' advisory committee in the development of a program.

### FLUORINE AND WATER SUPPLY

Extension of the fluorine studies under way in Newburgh and Kingston, N. Y., and in Grand Rapids, Mich., is indicated by a recent decision of Evanston, Ill., and Sheboygan, Wis., to add fluorine to the water supply. In Evanston coöperation between the city and state health departments and the University of Chicago dental clinic provides for a 15 year study to determine whether the addition of fluorine to water will protect teeth from decay. Mouth x-rays will be made of all children in the 6 to 8 and 12 to 14 year age groups.

In Sheboygan the Health Department, which is administering the program will make periodic reports to the city council.

### SOUTH DAKOTA PUBLIC HEALTH ASSOCIATION

The South Dakota Public Health Association, the newest affiliated society of the A.P.H.A., held its Seventh Annual Meeting in Mitchell on December 14 and 15. At this meeting the following new officers were elected:

*President*—C. E. Sherwood, M.D., Madison
*Vice-President*—H. Russell Brown, M.D., Watertown
*Secretary-Treasurer*—Gilbert Cottam, M.D., Pierre

### COURSE IN PUBLIC HEALTH PRACTICE FOR VETERANS

The George Washington University School of Medicine, Washington, D. C., has announced that two weeks of instruction in public health practice on a full-time basis will be offered to physicians beginning March 11. The first week will be devoted to the study of various infectious diseases, including problems of diagnosis and treatment and epidemiology. The second week will be devoted to the study of facilities for public health practice at the National Institute of Health and in large city and county units. According to the announcement, all costs of the course are met for medical veterans by the provisions of the G.I. Bill of Rights. Inquiries should be directed to the Director of Postgraduate Instruction, George Washington University School of Medicine, 1335 H Street, N.W., Washington 5, D. C.

### TYPHUS COMMISSION MEDAL TO CAPTAIN DAITZ

Captain Bernard D. Daitz, Sn.C., has been awarded the Typhus Commission Medal by the Surgeon General of the U. S. Army for "meritorious service in connection with the work of the United States of America Typhus Commission in Naples during the winter of 1943–1944." The citation reads in part: "Captain Daitz assisted in the organization and development of the system of recording all cases of typhus fever reported in Naples. This work included supervision of an office of records, development of a useful reporting form and provision of daily and weekly reports. In connection with the reporting system, he participated at times in the activities of the typhus case finding teams. His services were an important factor in assembling and making available information essential to the successful prosecution of measures for the control of typhus."

### PUBLIC HEALTH SERVICE TO SURVEY CHICAGO

Dr. Frank V. Meriwether, Director, District of the U. S. Public Health Service, has announced a survey of the Chicago health facilities by his office. The study was requested by the Chicago Medical Society, the Institute of Medicine of Chicago, and the Health Division of the Chicago Council of Social Agencies, and will probably require a

year to complete. Brig. Gen. James Thompson will direct the project.

### BRIGADIER GENERAL STANHOPE BAYNE-JONES AWARDED DISTINGUISHED SERVICE MEDAL

Brig. Gen. Stanhope Bayne-Jones, Deputy Chief of the Preventive Medicine Service, Office of The Surgeon General, has been awarded the Distinguished Service Medal for his outstanding "contribution to the maintenance of health within the Army."

"As Administrator of the Epidemiological Board," the citation stated, "he directed the extension, administration, and military application of the world-wide research and control program conducted by this board and its ten commissions."

Born in New Orleans, La., General Bayne-Jones is a graduate of Yale University and Johns Hopkins University Medical School. He entered the Medical Reserve Corps in 1915 and served throughout World War I. From 1917 to 1918 he served with the British Expeditionary Forces in France and Italy and later with the AEF in France and Germany, and has been decorated with the British Military Cross, the French Croix de Guerre, and the Silver Star with Two Oak Leaf Clusters.

Prior to being ordered to active duty in 1942, General Bayne-Jones was Professor of Bacteriology at Yale University and had held the position of Dean of the School of Medicine at that University.

### U. S. PUBLIC HEALTH SERVICE NEEDS PHYSICIANS, DENTISTS AND NURSES

Appointments to fill vacancies in the Reserve Corps of the U. S. Public Health Service are now being made, and examinations for Regular Corps appointments will be held in April and May. Physicians, dentists, and nurses are needed immediately for duty in hospitals, in the Tuberculosis and Venereal Disease Control programs, and in other activities of the Public Health Service.

Pay and allowances, established by law, are identical with those for medical officers of the Army. All travel expenses, including travel to first station, are paid by the Service.

Appointments to the Reserve Corps are made on a basis of review of data furnished by the applicant. Physical examination is required. Regular Corps appointments require appearance before a Board, and a written professional examination. A person receiving an appointment in the Reserve Corps immediately, may, if he desires, take the examinations for the Regular Corps at the time they are held.

Those interested in either immediate appointment in the Reserve Corps, or in taking the examination for the Regular Corps, should request application forms of the Surgeon General, U. S. Public Health Service, Washington, D. C.

### FLORIDA PUBLIC HEALTH ASSOCIATION

At a recent meeting, the following new officers were elected:

*President*—George A. Dame, M.D., Jacksonville
*First Vice-President*—Homer D. Venters, Tampa
*Second Vice-President*—Ruth E. Mettinger, Jacksonville
*Secretary-Treasurer*—Edward M. L'Engle, M.D., Jacksonville

The following four sections were officially organized and recognized:

Sanitation Section
Health Officers' Section
Public Health Nursing Section
Clerical Section

### THE CHURCH AND THE HEALTH OF THE COMMUNITY

Last October a number of Harlem health agencies and churches, recognizing the close interrelation of their separate interests, sponsored a three week "Health Institute for Ministers."

Thirty ministers attended the Institute and at a special ceremony received certificates in recognition of their interest in better health from Dr. Ernest L. Stebbins, Health Commissioner of New York City.

### NEW YORK TUBERCULOSIS AND HEALTH ASSOCIATION

The 14th Annual Conference of the New York Tuberculosis and Health Association will be held March 21 at the Hotel Pennsylvania.

Sessions on various phases of community health and welfare will be conducted throughout the one day meeting.

Election of officers of the Tuberculosis Sanatorium Conference of Metropolitan New York, which will meet simultaneously, also will be held.

### TERRITORY OF HAWAII ADOPTS COMMUNICABLE DISEASE REPORT AS OFFICIAL

C. L. Wilbar, Jr., M.D., President of the Board of Health of the Territory of Hawaii, Honolulu, has announced that the Board of Health of the Territory has adopted as official for Hawaii the report on the *Control of Communicable Diseases,* published by the American Public Health Association.

### "SOCIAL STATISTICS" COMES HOME

Two decades ago, in 1924, Raymond Clapp of the Cleveland Welfare Federation, in coöperation with the National Community Chests and Councils, undertook a study of the expenditures and services in the local community councils of 19 cities. At the beginning of 1946 the National Community Chests and Councils became responsible for national direction of the Social Statistics Project hitherto sponsored by the U. S. Children's Bureau. Thus a project begun by a private agency as a demonstration and later turned over to and matured in a public agency because of its greater resources and stability, has now been turned back to the private agency that first gave it birth.

The history of the undertaking is briefly: In 1927, after Mr. Clapp's 1924 study, Community Chests and Councils and the Community Research Committee of the University of Chicago organized a joint committee to plan for the collection of monthly reports from social agencies. By 1929, reports were received from 25 urban areas in 16 states, and the data were analyzed in a volume called "Registration of Social Statistics."

In 1930 the project was turned over to the Children's Bureau, coöperation continuing from Community Chests and Councils and other national agencies, chief among them the Russell Sage Foundation. In the 16 years of the bureau's sponsorship the project was expanded greatly. Between 1933 and 1937, 20 issues of the *Social Statistics Bulletin* were published, including figures on a wide range of social services.

Beginning in 1937, Social Statistics became a supplement to the Children's Bureau monthly, *The Child.* It has published statistics on hospital and outpatient services, on public health nursing, juvenile court and juvenile delinquency statistics, employment certificate statistics, data on day nursery and foster care, periodical reviews of relief statistics, figures on care of crippled children, neglected and delinquent children, group work statistics, maternity home care and maternity homes, statistics on homes for aged, chronically ill and dependent adults, transient service statistics, data on sources of funds for health and welfare programs, and finally an analysis of services of state health departments to mothers and children.

The Community Chests and Councils is again fathering this project. It will be supervised by a national advisory committee made up chiefly of local

community council executives but including also statisticians, among them Ralph Hurlin of the Russell Sage Foundation and Anne Geddes of the Federal Security Agency, who were active in the early days of the project, and Edward Schwartz who supervised the project in the Children's Bureau. Three members of the A.P.H.A. are on the Committee: Professor Ira V. Hiscock, Bertram Black, the Chairman of the committee, and Sara Kerr, Executive Secretary of the Buffalo Foundation. The director of the 1924 study, Raymond Clapp, and the Editor of *Survey Mid-Monthly*, Bradley Buell, are also committee members.

In addition to a central staff, present plans are for regional representatives on a part-time basis for field service and regional promotion. Regional workshops are also planned for the coming summer. Review of the report forms is now under way and some revisions may be made for the reporting year 1947. Currently 44 urban areas have participated in the project over a period of time.

### BARUCH COMMITTEE ON PHYSICAL MEDICINE

Bernard M. Baruch in 1944 made an initial grant of $1,100,000 to the Baruch Committee on Physical Medicine, to advance and encourage research, teaching, and training in the field of physical medicine—and to bring the benefits of this branch of medicine to the rehabilitation of persons maimed in war, industry, or by illness. The first annual report of the committee, prepared by the medical director, Frank H. Krusen, M.D., of the Mayo Clinic, has outlined the progress in attaining the objectives of Mr. Baruch's endowment. Eleven medical schools share funds in the original grants: Columbia University, $400,000; New York University, $250,000; Medical College of Virginia, $250,000; Massachusetts Institute of Technology, $50,000; University of Minnesota, $40,000; University of Southern California, $30,000; Harvard University, $25,000; University of Iowa, $15,000; University of Illinois, $15,000; Washington University, $10,000; Marquette University, $5,000; Harvard received a later special grant of $30,000 for a special fellowship program.

### APPOINTMENTS TO NATIONAL ADVISORY CANCER COUNCIL

Appointment of Dr. Robert S. Stone, Professor of Roentgenology at the University of California, and Dr. Charles B. Huggins, Professor of Surgery at the University of Chicago School of Medicine, for three year terms on the National Advisory Cancer Council has been announced by Surgeon General Thomas Parran of the U. S. Public Health Service, Federal Security Agency.

The new Council members replace Dr. Baird Hastings of Harvard University and Dr. James B. Murphy of the Rockefeller Institute, whose terms have expired.

The National Advisory Cancer Council is composed of six members in addition to the Surgeon General of the Public Health Service, who is chairman, ex officio. It serves as an advisory body to the Surgeon General in the direction of the work of the National Cancer Institute.

## PERSONALS

### Central States

ANTHONY J. BOROWSKI, DR.P.H.,* was appointed Registrar and Superintendent of the Bureau of Vital Statistics of the Department of Health, City of Toledo, Ohio, on November 15.

HARRY E. CARNES, M.D.,† has been discharged from the Army and has rejoined the staff of Parke, Davis &

Company, in the Division of Biological Production, Detroit, Mich.

CARL W. HAMMER, M.D., Oxford, Mich., has been named Assistant Professor of Health Education at the Montana State College, Bozeman, and Director of the Student Health Clinic.

PERCY L. HARRIS, M.D.,† Ravena, O., Health Commissioner of Portage County since 1938, has been appointed Chief of the Division of Communicable Diseases of the Ohio State Department of Health.

CHANGES IN HEALTH PERSONNEL IN ILLINOIS:

IRENE FAHEY, M.P.H.,† was employed as Health Educator by the Cook County Department of Health, effective November 1.

GERTRUDE KOENEMAN, R.N.,† has resigned from District 18, Illinois Department of Public Health, to enroll in the University of Minnesota for further graduate work. She will be replaced by THERESA KERN, R.N., former Supervising Nurse, Williamson County Health Department.

CAPTAIN CALVIN COREY † resumed his duties as Bacteriologist with the Illinois Department of Public Health, Springfield, effective October 16.

CAPTAIN GEORGE K. HENDRIX † resumed his duties as Sanitary Engineer with the Illinois Department of Public Health, Springfield, effective October 16.

MAJOR HERBERT E. MCDANIELS * resumed his duties as Bacteriologist with the Illinois Department of Public Health, effective December 1.

MELVIN T. JOHNSON, M.D.,† has been named Medical Director of Iowa Public Health District Number 5, Fort Dodge, Ia., succeeding FORREST J. AUSTIN, M.D.,† now of Omaha, resigned.

RUSSELL E. PLEUNE, M.D., Hancock, Mich., formerly Director of the Houghton-Keweenau-Baraga Health Department and recently released from the Army, has been appointed Deputy Commissioner of Health of the upper peninsula with offices in Escanaba, with the State Board of Health, succeeding WILBER J. M. MENKE, M.D.†

ELDRED V. THIEHOFF, M.D.,* has been appointed City Health Commissioner of Peoria, Ill., to succeed the late SUMNER M. MILLER, M.D.,* effective January 7, 1946. Dr. Thiehoff has been associated with the Michigan Dept. of Health since 1940, for one year as Assistant Director of the Bureau of Local Health Services, and since as Director of the same Bureau. In addition, he was Deputy State Health Commissioner for 3 years.

## Eastern States

BURTIS B. BREESE, JR., M.D., Rochester, N. Y., has been named Deputy Health Officer of the Rochester Health Bureau, effective January 1. Dr. Breese is the first of two new officers to be appointed to positions in the Health Bureau. He will be concerned chiefly with communicable diseases. A second health officer, who will specialize in venereal diseases, will be appointed later.

MRS. HELEN R. COOLEY of the staff of the State Committee on Tuberculosis and Public Health, State Charities Aid Association, New York City, has been appointed Executive Secretary of the Tompkins County Tuberculosis and Public Health Association at Ithaca, N. Y., succeeding LOUISE BABCOCK, who has resigned to accept a position in California.

* Fellow A.P.H.A.
† Member A.P.H.A.

EDITH M. GATES,* formerly in charge of health education with the National Board, Y.W.C.A., New York City, has recently been in Cyprus on the staff of UNRRA and concerned with the repatriation of displaced persons. More recently she has been working in vocational rehabilitation of refugees in Switzerland as the representative of the American Christian Committee for Refugees.

HELEN S. MITCHELL, PH.D.,* of New Haven, Conn., was appointed Professor of Nutrition, Department of Home Economics at the Carnegie Institute of Technology, Pittsburgh, Pa., effective January 28.

CHANGES IN HEALTH OFFICERS IN NEW YORK STATE:

JOHN A. CONWAY, M.D.,* dean of New York District State Health Officers, retired January 1 after 31 years' service in the State Department of Health. For many years, he has served the counties of Allegany, Chemung, and Steuben from headquarters in Hornell.

DANIEL P. MCMAHON, M.D.,† formerly District State Health Officer in Amsterdam, N. Y., has returned from military service. He will serve as District State Health Officer in the Hornell district.

ALEXANDER ZEISSIG, D.V.M., PH.D., has been appointed Veterinary Consultant on rabies on the staff of the Division of Communicable Diseases.

WALTER M. PAMPHILON, M.D., Willard, N. Y., Assistant Director of the Willard State Hospital, has been named Assistant Commissioner of the New York State Department of Mental Hygiene. Dr. Pamphilon, who had previously been detailed as Acting Medical Inspector, has been assigned to the Inspection Service of the Department and will be on duty in the New York City office for part time, besides assisting with the Department's program for post-war building.

JOHN B. PASTORE, M.D., has been appointed Executive Director of the Hospital Council of Greater New York. He formerly was Assistant Director of New York Hospital where he had considerable experience in general administration and the development of special programs. Dr. Pastore has participated in several projects at New York Hospital and Cornell Medical College and has taken an active interest in hospital problems in the community. He will direct the planning and coördinating programs of the hospital council.

WILLOUGHBY J. ROTHROCK, JR., M.D., Philadelphia, Pa., has been assigned by the U. S. Public Health Service as Director of the Tuberculosis Control Program for the Chattanooga-Hamilton County Health Department, Tennessee.

WILSON G. SMILLIE, M.D.,* Professor of Public Health at the Cornell University School of Medicine and Member of the Association's Committee on Professional Education, is Chairman of the newly created Public Health Committee of the New York County Medical Society.

EDWIN F. VOIGT,* Managing Director of the Biological Division of Wyeth, Inc., Philadelphia, expects to leave their employ shortly. Prior to working with Wyeth, he was for 20 years associated with Lederle Laboratories, Inc., at Pearl River, N. Y., as Bacteriologist, Assistant Director, and Director of the Biological Division.

### Southern States

ASA BARNES, M.D.,† Jefferson City, Mo., has joined the staff of the Office

* Fellow A.P.H.A.
† Member A.P.H.A.

of the Medical Director, American Red Cross, in charge of general medical services. After more than 4 years' service in the Army Medical Corps, Dr. Barnes was recently discharged with the rank of colonel. He served 22 months in North Africa, Sicily and Italy.

BRIGADIER GENERAL RAYMOND W. BLISS has been appointed Deputy Surgeon General to succeed MAJOR GENERAL GEORGE F. LULL,† retired. In addition to his new responsibilities, General Bliss will continue to handle the duties of Assistant Surgeon General and Chief of Operations Service. His outstanding contributions to the achievements of the Medical Department in these capacities won him the Distinguished Service Medal.

MARJORIE GOOCH, Sc.D.,* has transferred from the Children's Bureau of the Dept. of Labor to The Division of Research and Statistics of the Social Security Board in Washington, D. C.

MAJOR CLIFFORD H. GREVE † has been released from the Army to inactive duty after four years of service. During this time, he served as Chief of the Statistical Division, Michigan State Headquarters for Selective Service and as Chief of the Medical Statistics Section of National Headquarters of the Selective Service System. Mr. Greve has assumed a position as Senior Statistician in the Bureau of States Services of the U. S. Public Health Service at Bethesda, Md.

LAWRENCE KOLB, M.D., Washington, D. C., formerly Chief of the Mental Hygiene Division of the U. S. Public Health Service, has been appointed Deputy Medical Director of the State Department of Mental Hygiene in California. This post, the first of its kind in California, was created by the 1945 legislature.

CHANGES IN HEALTH OFFICERS IN NORTH CAROLINA:

HAROLD C. WHIMS, M.D.,† Newton, Health Officer for Catawba County, has resigned to become Health Officer of Buncombe County, with headquarters in Asheville.

ZACK P. MITCHELL, M.D.,† Shelby, Health Officer of Cleveland County, has been named Health Officer of Iredell County.

LT. COL. JOHN W. REGAN, M.C., U.S.A.,† who has been Assistant Director of the Sanitation and Sanitary Engineering Division, Preventive Medicine Service, Office of the Surgeon General, Washington, has been appointed Director of that Division. Colonel Regan is a graduate of the Harvard Medical School in 1936.

ROY J. SETTLE, M.D.,† recently discharged from the Army Medical Corps, has been appointed Director of the Williamson County Health Department, Tennessee, succeeding WILLIAM B. FARRIS, M.D.†

THEODORE R. SHROP, M.D.,† following his release from active duty with the U. S. Public Health Service, is now serving as Deputy State Health Officer of the Maryland State Department of Health, assigned as Health Officer of Howard County, with offices at Ellicott City, Md.

WINFORD H. SMITH, M.D., for 34 years Director of the Johns Hopkins Hospital, will retire March 31. His successor will be EDWIN L. CROSBY, M.D.,* Assistant Director since 1940. Dr. Smith was President of the American Hospital Association in 1916 and the first President of the Maryland-District of Columbia Hospital Association of 1941. Before coming to Johns Hopkins, Dr. Crosby was associated with the New York State Health Department.

* Fellow A.P.H.A.
† Member A.P.H.A.

ELSBETH H. VAUGHAN, R.N.,* Washington, D. C., recently resigned from the Red Cross Nursing Services. Having resigned as Director of Public Health Nursing and Disaster Nursing in 1937, Mrs. Vaughan returned to the Red Cross in 1940, and became Director of Nursing in the Midwestern Area. In 1935 Mrs. Vaughan was awarded the Florence Nightingale medal.

CHANGES IN HEALTH OFFICERS IN VIRGINIA:

WILLARD W. GRIGGS, M.D., Newport News, has been named Health Officer of the Page-Warren-Shenandoah Health District, effective November 1.

JAMES M. SUTER, M.D.,* Bristol, has returned to service with the Virginia Department of Health as Health Officer of the Smyth-Washington-Bristol Health District, effective December 6.

FREDERICK C. HEATH, M.D., Laureldale, Pa., has been appointed Health Officer of the Giles-Montgomery-Radford Health District, with headquarters at Christiansburg, effective January 1.

## Western States

HARRY V. GIBSON, M.D.,† Health Officer for a number of years of Great Falls, Mont., has been placed in charge of the reorganized Health Department in Great Falls and Cascade County.

GEORGE HILL HODEL, M.D.,* of Los Angeles, Calif., is en route to China on a public health mission for UNRRA, in the capacity of Chief Regional Medical Officer. Dr. Hodel is Chief of Staff of the First Street Clinic, Los Angeles, and was for several years Chief of the Division of Social Hygiene in the Los Angeles County Health Department. His assignment to UNRRA is expected to last until the spring of 1947.

MARTIN KARR, M.D., San Mateo, Calif., has been employed as Medical Officer in the State Bureau of Maternal and Child Health and assigned to the Bureau of Vocational Rehabilitation, State Department of Education, where he will give assistance in developing the new physical restoration program of that agency along the lines of the medical care programs of the Department of Public Health.

DOUGLAS G. MACPHERSON, M.D., San Francisco, Calif., formerly Director of the Los Angeles City Division of Industrial Hygiene, is now Chief of the Los Angeles County Division of Industrial Hygiene, replacing HUGH E. DIERKER, JR., M.D.,† who has become Medical Director of the Southern California Division of the General Motors Corporation.

THOMAS F. MANCUSO, M.D., Acting Director of the Division in Industrial Hygiene, Oregon State Board of Health, Portland, has been appointed Chief of the Division of Industrial Hygiene of the Ohio Department of Health.

A. V. NASATIR, M.D.,* has returned from nearly four years of military service to his former position as Director of the Division of Industrial Hygiene, City of Los Angeles Department of Health. Dr. Nasatir served in an industrial medical capacity in this country and went through the European invasion with the First Army during which he was assistant G-5 of the First Army, Chief of the Public Health Section.

GEORGE F. O'BRIEN, M.D., Sacramento, Calif., has been appointed Health Officer of Stanislaus County to succeed J. LYLE SPELMAN, M.D.,† of Cenes, resigned.

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* Fellow A.P.H.A.
† Member A.P.H.A.